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UNITED STATES DEPARTMENT OF AGRICULTURE

FOOD AND NUTRITION SERVICE

RFP No. FNS-91-20SLS

FOOD ASSISTANCE DELIVERY IMPLEMENTATION AND EVALUATION STUDIES

August 8, 1991

VOLUME I: TECHNICAL PROPOSAL

Submitted by:

Price Waterhouse

In Association With:

Macro International
Benton International
Market Facts, Inc.
Electronic Strategy Associates, Inc.
BCA, Inc.

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Office of Government Services
1801 K Street N.W
Washington DC 20006

Price Waterhouse

August 8, 1991

U.S. Department of Agriculture
Food and Nutrition Service
Contract Management Branch
Administrative Services Division
3101 Park Center Drive, Room 914
Alexandria, VA 22302

Attention: Elaine S. Lynn
Contracting Officer

SOLICITATION RFP NO. FNS 91-20SLS
FOOD ASSISTANCE DELIVERY IMPLEMENTATION AND EVALUATION STUDIES

VOLUME I: TECHNICAL PROPOSAL

Dear Ms. Lynn:

The **Price Waterhouse Team** is pleased to submit our proposal to provide the referenced assistance under a task order contract to the Food and Nutrition Service. Our project team include Price Waterhouse (Prime Contractor), Benton International, Macro International, Market Facts, Electronic Strategy Associates, and Burger, Carroll Associates.

This volume contains our technical proposal and summary of qualifications. It includes a separately bound Appendix. It has been prepared in conformance with the instructions contained in the Request for Proposals. If you have any questions regarding our proposal, please contact Dr. John Korbel or Mr. Joseph Casey at (202) 296-0800.

Very truly yours,

Price Waterhouse

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BENTON
INTERNATIONAL

August 7, 1991

Mr. John J. Korbel
Price Waterhouse
Office of Government Services
1801 K Street, N.W.
Washington, D.C. 20006

Re: Request for Proposal
No. FNS 91-20SLS

Dear Mr. Korbel:

Benton International is pleased to be included as a subcontractor in Price Waterhouse's proposal to the Food and Nutrition Service, and hereby commits to Price Waterhouse to serve as a subcontractor in accordance with the terms of the RFP, in the event that Price Waterhouse is awarded the contract under the RFP.

This letter is intended to meet the requirements of Page 65, footnote 1, of RFP No. FNS 91-20SLS, and should be so construed.

We look forward to working with you on this project.

Sincerely

James O. Howard
Chief Financial Officer

2601 Airport Drive • Suite 370 • Torrance, California 90505-6136 • (213) 534-2611 • FAX (213) 539-6923
747 Third Avenue • 32nd Floor • New York, New York 10017-2832 • (212) 752-3020 • FAX (212) 593-3796

MACRO

August 7, 1991

Dr. John Korbel
Office of Government Systems
Price Waterhouse
1801 K Street, NW
Washington, DC 20006

Reference: FNS RFP 91-20-SLS, Food Assistance Delivery Implementation and Evaluation Studies

Dear Dr. Korbel:

Macro is pleased to join the Price Waterhouse Team in responding to the referenced procurement. We believe that the resources offered by this team will give FNS a fresh perspective on the issue of Electronic Benefit Transfer and the applicability of this technology to FNS' food assistance programs. We recognize that those who understand EBT best are not necessarily those best equipped to develop instructional materials and provide training. Macro is pleased to be working with the Price Waterhouse Team's EBT experts in developing instructional products that will be appropriate and cost effective.

Macro brings the team expertise in training and instructional product development; in addition, Macro has ample resources in research, evaluation, and analysis that can be drawn upon in future tasks. Macro has produced award winning videodisc technology applications and was recently recognized by ABC World News Tonight with Peter Jennings as a leader and innovator in the computer-based instruction. Macro is currently implementing a $27 million alcohol and other drug abuse prevention program in regions, states, and local communities throughout the country.

We also look forward to the opportunity of providing expertise in future tasks. Our research and evaluation staff have been immersed in the issues of integrated services and we believe that our understanding of the contextual background for EBT may be helpful.

We are happy to participate in the Price Waterhouse Team, and are confident of our abilities to provide FNS with the necessary support to move Food Stamps and other assistance programs from paper systems to electronic systems.

Sincerely,

JoAnn Kuchak
Vice President

8630 Fenton Street • Silver Spring, Maryland 20910 • Telephone 301-588-5484 • Fax 301-585-3180

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MARKET FACTS, INC.

Washington, D.C. · Chicago · New York · Los Angeles · Dallas · Boston · Toronto · Montreal · Vancouver

1776 I STREET, N.W., SUITE 1040
WASHINGTON, D.C. 20006-3700
(202) 429-6990
FAX (202) 429-6988

August 2, 1991

Dr. John Korbel, Partner
Office of Government Systems
Price Waterhouse
1801 K Street, NW
Washington, DC 20006

Dear John:

On behalf of Market Facts, I am pleased to join with Price Waterhouse in this proposal to FNS to provide Food Assistance Delivery Implementation and Evaluation Studies. The team you have assembled has great strengths in all the areas needed to assist FNS Headquarters, Regional Offices, and States in the coming transition to operational EBT and other alternative issuance systems. The team offers highly professional expert services in the areas of electronic funds transfer, technical assistance, automated systems development and testing, training, policy research and program evaluation. Team members are experienced in evaluating alternative issuance systems, including both cash-out and EBT, and understand the issues thoroughly.

Of particular importance, in my view, is the ability of Price Waterhouse to give management and technical advice completely free of conflicting interests. As a major and highly respected accounting and management consulting firm, Price Waterhouse has a solid reputation as an unbiased source of credible information. That reputation and the professional work on which it is based position Price Waterhouse well to give effective overall leadership to the team. We are confident, based on previous mutual engagements, that our several firms will work together effectively under your direction to the advantage of FNS.

Market Facts brings to the Price Waterhouse team extensive capabilities to design evaluations of program innovations and to collect and process survey data. We are one of the largest full-service survey research and consulting firms in North America, conducting over 2,000 projects annually for clients in virtually every sector of American life. Work under this engagement would be carried out by the Public Sector Research Group, a specialized component of the firm developed to apply the methods of survey research to the policy needs of public agencies.

In particular, Market Facts is known for rigorous collection of high-quality data and expert application of quantitative methods in sample design and statistical analysis of

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MARKET FACTS

data. Our experience in the Off-line EBT Evaluation in Dayton is highly relevant to this procurement, and our work to date illustrates our skills in research design and planning for data collections and analysis. Other recent experience documents our ability to collect policy-relevant data from difficult populations including residents of rent-subsidized housing projects (for HUD), the elderly (for the University of North Carolina), urban low-income households (for the Metropolitan Chicago Information Center), and rural low-income populations (for DHHS/ASPE).

We look forward to this opportunity to continue our very successful relationship with the Food and Nutrition Service and with Price Waterhouse. Please contact Stephen Weber or me if you desire further information.

Sincerely,

W. Burleigh Seaver
Vice President

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ELECTRONIC
STRATEGY
ASSOCIATES, INC.

July 30, 1991

Dr. John J. Korbel
Partner
Office of Government Services
Price Waterhouse
1801 K. Street, N.W.
Washington, D.C. 20006

Dear John:

I am delighted to be asked to be a part of the Price Waterhouse Team for FNS 91-20SLS. I have been involved with EBT from the planning, evaluation and "speculation" sides for several years. Having a chance to help resolve issues and make EBT work for all involved parties is a special challenge and opportunity to me and ESA.

Having much background in EFT and EFT networks and product development in the US payment system, I feel I can add much to the Team. I have continued excellent rapport with all the critical parties to EBT and that rapport should find several uses in the project.

I have familiar with the time frames of the RFP and will be available to meet them.

Please consider this letter a full endorsement of the Price Waterhouse approach and effort. Price Waterhouse will bring new vitality, new skills, and a new approach to EBT. I am pleased to be asked to be a part of the Team.

Sincerely,

Paul F. P. Coenen
President

42 Lakeshore Drive
Suite 100
Atlanta, Georgia 30067
(404) 953-1937

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Burger, Carroll Associates
2442 Cerrillos Road, Suite 218
Santa Fe, New Mexico 87505
(505) 471-0418

August 2, 1991

Joseph Casey
Price Waterhouse
1801 K Street NW
10th Floor
Washington, D.C. 20006

Dear Mr. Casey,

Burger, Carroll Associates is pleased to participate in your firm's response to the USDA, Food and Nutrition Service solicitation entitled "Food Assistance Delivery Implementation and Evaluation Studies" (RFP Number FNS 91-20SLS). We are confident that the extensive expertise represented by your proposed project team will provide the agency with the highest quality of programmatic and technical consultation.

If you have any questions relevant to our participation, please contact me at (505) 471-0418.

Sincerely,

Arthur W. Burger
Partner

BURGER, CARROLL ASSOCIATES

AB/st

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THE URBAN INSTITUTE

2100 M STREET, N.W. / WASHINGTON, D.C. / (202) 833-7200

Nathan Young
Research Associate I

Direct Dial:
(202) 857-8654

Joe Casey
Price Waterhouse
Office of Government Services
1801 K Street, N.W.
Washington, D.C. 20006

Dear Joe,

This letter is to formally express my intent to consult with Price-Waterhouse on the Food Assistance Benefit Delivery Implementation and Evaluation Studies, independent of, but with agreement of The Urban Institute. I anticipate that my current work schedule makes it unlikely that I may consider work on this BOA before January 1, 1992. As relevant tasks come up, such as review of state plans, state evaluation design, literature reviews, and multiple state evaluations, we can discuss your needs and my availability on an item-per-item basis.

Sincerely,

Nathan Young

Nathan Young, Ph.D.

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STATEMENT OF AUTHORSHIP		
Authors for Section	Percentage of Authorship for Section	Relationship to Work to be Performed
EXECUTIVE SUMMARY		
• Dr. John Korbel	100%	Co-Project Manager
I. SUBSTANTIVE CAPACITY TO MEET FNS INFORMATION NEEDS		
• Mr. Joseph Casey • Mr. Bruce Caswell • Mr. Paul Coenen • Mr. Kevin Confoy • Mr. Mike Corely • Mr. Noshir Kathok • Dr. John Korbel • Dr. Leigh Seavers	35% 20% 5% 20% 5% 5% 5% 5%	Deputy Project Manager Project Staff Executive Committee Project Staff Project Staff Project Staff Co-Project Manager Executive Committee
II. STAFFING CAPABILITIES, CORPORATE EXPERIENCE, AND MANAGEMENT OF STAFFING		
• Mr. Bruce Caswell • Mr. Kevin Confoy • Dr. John Korbel	30% 30% 40%	Project Staff Project Staff Co-Project Manager
III. TECHNICAL AND MANAGEMENT APPROACH TO TASK ORDER 1.0		
• Ms. Elizabeth Byrom • Mr. Joseph Casey • Dr. John Korbel • Ms. JoAnn Kuchak • Ms. Heidi Scanlon	30% 35% 10% 20% 5%	Project Staff Deputy Project Manager Co-Project Manager Executive Committee Project Staff
PROPOSAL REVIEWERS		
• Dr. John Korbel • Mr. Joseph Casey • Mr. Noshir Kathok	-- -- --	Co-Project Manager Deputy Project Manager Project Staff
PROPOSAL ADVISORS		
• Dr. Fred Laughlin • Mr. John Benton • Ms. JoAnn Kuchak • Mr. Leigh Seavers	-- -- -- --	Quality Assurance Manager Executive Committee Executive Committee Executive Committee

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EXECUTIVE SUMMARY

Price Waterhouse, Benton International, Macro International, Market Facts, Electronic Strategy Associates, and Burger, Carroll Associates offer our collective resources to provide contractor support to the Food and Nutrition Service for **"Food Assistance Delivery Implementation and Evaluation Studies."**

The purpose of this task order contract is to assist FNS with research, evaluation, training and technical assistance in relation to alternatives for delivering Food Stamp Program and other assistance program benefits, including such alternatives as Electronic Benefit Transfer and cash out. FNS has been involved in demonstrations and evaluations of these alternatives and, with the 1990 Farm Bill, EBT will soon be an operational alternative for states. States are in need of training and technical assistance as they consider alternatives and implement EBT, with the first task under this contract geared towards providing this assistance. Moreover, with the increasing acceptance and use of EFT/EBT technologies across the Federal and other government levels and with the implications of these technologies for other related income assistance programs, FNS support will be vital to the adaption and adoption of EBT at both the Federal and state levels. This task order contract will play a key role in implementing and evaluating food assistance and other income support methods of delivery.

The successful contractor must combine a broad mix of professional skills, resources, and experiences to provide appropriate and effective, timely task order support. In encouraging teaming arrangements, FNS recognizes that it is unlikely for an individual firm to possess the requisite depth and breadth of resources to meet current and anticipated task order needs. Among other attributes, the successful contractor must have:

- The **capacity to understand and respond to FNS's information needs** both in terms of the professional resources and experience of the contractor and in the demonstrated understanding of benefit delivery issues and approaches.

- An **approach to creating task order teams**, including identifying resources, assigning tasks, managing individual tasks, and managing multiple task order assignments.

- A variety of **staff capabilities, skills and experience** in areas ranging from project management, to research design, to POS, EFT/EBT technologies and practices, to technical writing.

- **Corporate experience** in managing multiple subcontractor teams and multiple assignment contracts, in policy research and analysis in food assistance and related areas, and an in-depth understanding of point of sale (POS) and EFT/EBT technologies and their application in both the public and private sectors.

- An **approach to EBT training and technical assistance** for FNS and states which understands EBT technology, operations and issues and has tested methods for developing and implementing training packages.

- An **approach to management and staffing of training for technical assistance support** which incorporates the appropriate mix of EBT expertise and training skills for broad based support on a national basis.

<u>**The Price Waterhouse Team has the capacity to respond to FNS information needs and an in-depth understanding of food assistance delivery issues and alternative delivery mechanisms**</u>. In both Sections I and II, we describe the roles and capabilities of our organizations. In order to respond effectively to the requirements of this contract, Price Waterhouse in association with its subcontractors, has formed an interdisciplinary team which incorporates capabilities in large project management, policy research and analysis, understanding and experience with POS and EFT/EBT technologies and practices, and training and technical assistance at all levels of government. As mentioned above, the **Price Waterhouse Team** consists of the following organizations:

- **Price Waterhouse (Prime Contractor)**, which brings to the project team extensive experience in project management and in particular, management of

multiple subcontractor, multiple task order type contracts; experience with data systems design, development, and implementation; in depth knowledge and experience in the financial services industry and applications of EFT/EBT technologies in both government and the private sector; and the Firms vast resources with more 115 offices across the nation.

- **Benton International (BI)**, which is a management consulting, business research, and systems integration organization, brings to the team extensive experience in the development and implementation of payment systems and in addressing technical and policy issues concerning the integration of advanced telecommunications and computer systems. BI will provide FNS with thorough, current, and objective knowledge regarding complex issues associated with the application of EFT/EBT technologies to the Food Stamps and related programs.

- **Macro International (MI)**, a broad based consulting firm, brings to the project team extensive experience in instructional technologies, training and technical assistance and experience in large electronic networks and processing applications as well as in policy research, analysis and evaluation.

- **Market Facts (MF)**, a full-service survey research and consulting firm brings to the project team it extensive data collection and analysis capability and experience in sample design, survey execution, data processing, and research analysis employing a variety of statistical methods and tools.

- **Electronic Strategy Associates (ESA)**, an association of Electronic Funds transfer (EFT), Automated Teller Machine (ATM), Automated Clearing House (ACH), Point of Sale (POS), and financial transaction card professionals, brings to our project team pertinent knowledge and hands on experience with POS and ATM networks, electronic technologies, and application of EBT systems. ESA's EBT experience in evaluating on-line and off-line systems for FNS will particularly useful to FNS and the project team.

- **Burger, Carroll Associates (BCA)**, which providing management and information system consulting services to the public sector health and nutrition community, brings to FNS and the project team critical experience in the design, development, and implementation of public health and nutrition-related information systems and in designing multi-program integrated statewide information system networks including food assistance programs.

Together, the Price Waterhouse Team offers organizations with the complementary mix of skills and resources and the breadth and depth required to provide effective and timely task

order support to FNS and states in implementing and evaluating food assistance delivery mechanisms.

In Section I, we demonstrate our understanding by providing background on the Food Stamp Program and the role of EBT in the program's history. We review various models of EBT and demonstrations that have taken place in the Food Stamp Program and related programs. In order to understand the EBT and alternative delivery system implementation issues and concerns at the Federal and state levels, we conducted an informal survey of all 50 state Food Stamp Agencies to gain their perspective on the issues and their assessment of technical assistance needs. We believe these views are critical to developing an effective training and technical assistance package under Task Order 1.0 of this contract. Finally, our concept papers on EFT security/vulnerability and implications for EBT systems; evaluation of alternative food issuance systems; and industry standards for commercial EFT networks and the implications for EBT systems demonstrate our understanding issues, objectives, and approaches for addressing possible task assignments.

Finally, Section I demonstrates our understanding of the implementation assistance requirements and the balancing between research and analysis, adaption and adoption of EBT/EBT technologies, and the need for training and technical assistance to the FNS regions and states. We believe this task order contract needs a contractor which brings fresh and needed energy to the food assistance delivery area; offers a mix of skills, perspective and knowledge of EFT/EBT, data systems, and innovative approaches to training and technical assistance as well as policy and research capabilities that builds on the solid research base developed by FNS; provides objectivity and independence in assisting FNS and states in considering and evaluating delivery alternatives; can facilitate acceptance of delivery alternatives and provide linkage between the public and private sectors; is integrated in the banking and financial services community at the national, private sector, and state levels; can improve access to key the many

and diverse players in the food assistance area; and, above all, understands the immediate and broader policy context of developments in this issue area. We believe the **Price Waterhouse Team** brings these and many other attributes to FNS in addressing the requirements of this contract.

We understand the requirements of task order contracts and offer a tested approach for creating task order teams. As noted in Section II. A, the first step in our approach was the creation of an interdisciplinary team drawn from six different organizations. This approach was encouraged by the Request for Proposal (RFP) which recognized that it was unlikely for one or even a few firms to have all the requisite skills. The next step is creating and organization structure that effectively coordinates and deploys the resources of the Price Waterhouse Team organizations. Key elements of our management structure include:

- A **Management Team** consists of Dr. John Korbel and Mr. Ran Advani, Co-Project Managers and Price Waterhouse Partners and Mr. Joseph Casey, Deputy Project Manager and Manager with Price Waterhouse. Dr. Korbel and Mr. Advani bring to FNS the mix of policy research and EFT/EBT and computer systems direction required by this and offer FNS a single point to contact for all technical and contractual matters. Mr. Casey, as Deputy Project Manager, will facilitate the day-to-day project management.
- An **Executive Committee** consisting of principals representing our Team's firms. This committee will review all task order requests and participate in decisions regarding task order assignment and progress.
- A **Quality Assurance Manager, Dr. Fredric Laughlin**, a Price Waterhouse Partner, who will task order performance to assurance that products and our conduct of the assignment are consistent with the statement of work and, as part of Price Waterhouse's Second Partner review, assure that project documentation and performance are consistent with our internal standards.
- **Functional Leaders** in broad topic areas to identify and coordinate professional resources devoted to specific. These Functional leaders, who may also serve as Task Manager, are in the areas of Project/Resource Management; Research Design, Analysis, Implementation, and Reporting; EFT/EBT Technologies and Delivery Methods; and Training and Technical Assistance.

With this organization structure, subsequent steps in our approach to creating task order teams include our method for assigning tasks, managing tasks, maintaining task and overall contract documentation. Our approach to assigning staff is to view our Price Waterhouse Team professionals collectively rather than as resources from separate firms--that is, we use an integrated approach to task order assignment. Our objective in creating teams, is to bring together the right mix of skills that most effectively address task needs. Thus, we anticipate that many of the task order teams will be integrated and draw professionals from respective firms. The Task Managers for the various tasks will report to the Management Team and directly to the government's task monitor.

We bring to FNS professional staff with capabilities, skills, and experience in all the topic areas required under this contract. As indicated in Section II. B, our project team consist of more that -- professionals from our various firms. Many of these professionals bring to FNS skills and experience in more than one area and thus offer to FNS greater breadth, depth and further disciplinary integration. We identify for our senior professionals their experiences according to the various topic areas further highlighting their potential contribution to the project team. While this group of professionals has the requisite skill and experience in the policy analysis and research areas, we bring to FNS particular strength in the areas of large and complex project and project team management, training and technical assistance, and, most importantly, in-depth knowledge of POS, EFT/EBT technologies and their applications in a variety of settings.

Our team has significant experience in managing complex, multiple contractor, multiple assignment contracts for the Federal government and significant corporate experience from assignments in topic areas related to this contract. In Section II. C, we identify and describe 18 projects (three from each of our team's firms) that highlight our experience in all areas of this contract. The **Price Waterhouse** corporate experience is

particularly strong in task order management, in systems design, development and implementations, and in EFT/EBT in the government. **Benton International** has completed numerous assignments in addressing EFT/EBT technologies and practices. **Macro International**, in addition to research design and analysis, provides significant examples of its training and technical assistance experience. **Market Facts** enhances the project teams data collection capabilities and our understanding of the Food Stamp Program and delivery mechanisms. **Electronic Strategy Associates** provides examples of its experience in EBT implementation particularly as it applies to the Food Stamp Program. **Burger Carroll Associates** provides examples of their experience in the WIC and related food assistance programs and understanding of automation at the state level.

Our approach to training and technical assistance for implementing EFT/EBT and other delivery alternatives as part of Task Order 1.0 is innovative and effective. In Section III, we present our approach to developing and delivering training and technical assistance to the FNS Regions and State Food Stamp Agencies considering and implementing food assistance delivery alternatives. This approach draws extensively upon our knowledge of EBT technology, operations, and policy issues. It demonstrates our ability to select appropriate information for disseminating and effectively conveying to Federal and state food assistance agencies. Our approach builds on our teams knowledge base and the research conducted in preparing this proposal. In particular our informal survey of all the states to identify their status in moving towards EBT and to understand their technical assistance need. Our technical approach incorporates a training plan that understands the information needs of FNS Headquarters and Regional Office staff, as well as state agency staff. The approach incorporates interactive video technologies and other learning tools.

Our to the management and staffing of the training and technical assistance task order, demonstrates our collective commitment to this area of support. Our project team

draws upon the resources of all our team members, but principally Price Waterhouse, Macro International, and Benton International. This mix of professional resources draws upon our organizational strengths and develops a staff plan consistent with the task order requirements. This management and staffing approach reiterates the steps by which we assign and execute task order assignments.

* * * * *

In summary, the Price Waterhouse Team consisting of six firms has been formed to address the diverse range of skills and potential task order support under this contract to provide food delivery assistance implementation and evaluation studies. Our tested organization structure will allow to identify the appropriate professionals from our various firms to staff task orders in an effective and timely manner. Our reputation for independence and objectivity will facilitate the implementation of food assistance delivery strategies. We bring to FNS a fresh perspective coupled with substantial experience in the application of POS, EFT/EBT technologies to both commercial and government activities and are confident in our ability to perform under the challenges of this task order contract.

I. SUBSTANTIVE CAPACITY TO MEET FNS INFORMATION NEEDS

The Food Stamp Program is confronted in the near term with the reality of implementing a major change in the way the benefits are issued to recipients, the way those benefits are converted into food purchases, and the way that the expended benefits flow through the national financial system of banks, clearing houses, and the Federal Reserve. The changes associated with the elimination of the current paper coupon system in favor of electronic benefits transfer will result in a significant restructuring of the established state and Federal roles with respect to food stamp administration. Finally, this change will call into issue fundamental financial issues about the way program funds are managed and distributed and the consequent effects on interest earnings and to whom those earnings accrue.

In this section, the **Price Waterhouse Team** addresses the variety of issues that surround this change. We begin in Section A with a review of the Program's history and characteristics and continue with discussions of key EBT/FSP issues. A significant quantity of the information presented in these discussions was developed over the past 15 days through discussions with state officials in *all* of the states, discussions with the major financial networks, and representatives of the banking, electronic funds transfer, and merchant communities. In Section B we present our response to each of the three concept papers called for in the request for proposals.

Finally, in Section C, we briefly review the requirements of this task order contract and the rationale for the diverse and resource-rich team we have brought together to assist FNS in its EBT implementation leadership role. The primary difference that distinguishes our team from all others is that we represent an appropriate and unique balance between research and technical implementation experience, particularly hands-on EFT/EBT technical knowledge and applications coupled with our regulations for independence and objectivity. This balance is vital

to well planned EBT systems for both Food Stamps as well as WIC and the other major state administered income transfer programs such as AFDC, Child Support, General Assistance.

A. Overview of Benefit (FSP) Delivery Process and Electronic Benefit Transfer History and Issues

In this section of the proposal, the **Price Waterhouse Team** addresses two goals. First, we demonstrate our ability to develop a sound working understanding of the Food Stamp Program. To do this, we provide a general background discussion of the Food Stamp Program as it currently operates. Second, we demonstrate our understanding of EBT and the implementation of EBT in the Food Stamp Program. Then, we examine a variety of aspects of the history, current status and directions that EBT is likely to take.

1. Overview of the Food Stamp Program

In this section, we summarize the history of the Food Stamp Program, participant characteristics, and program characteristics.

a. FSP Program History

The Food Stamp Program was first authorized in 1964 under the Food Stamp Act. The goal was to improve the nutrition of low-income households. While the Food Stamp Program was designed to be Federally funded, its day-to-day administration occurred at the state level. The Act required applicants to apply in person at their local food stamp office. The 1964 Food Stamp Act also required each state participating in the program to establish eligibility standards for low-income households. States developed their own standards for residency, financial resources, and household composition. As originally defined, a "household" was an economic unit comprising a group of individuals who lived together, shared cooking facilities, and

purchased food together. All states were required by this Act to participate in the Food Stamp Program by 1971.

In 1971, the Food Stamp Act was amended by Congress to ensure that food stamps went to truly needy households. Amendments were passed which transferred the responsibility of eligibility requirements from the states to the Federal government; thus, nationally, uniform standards applied to all people. Also, benefits were denied to communal groups.

New legislation was enacted as the Food Stamp Act of 1977. In this Act, the Food Stamp Program was simplified, eligibility requirements were made more precise, and the number of judicial challenges to the program's regulations was reduced. Among some of the specific changes to the Food Stamp Program were clarification of the program's goals and procedures, quality control review, and the re-definition of a household. The focus of a household changed from one based on members sharing resources to that of individuals purchasing food and preparing meals together.

In the early 1980's, Congress enacted major revisions to the Food Stamp Program in an effort to contain costs and tighten administrative rules. The Omnibus Reconciliation Act of 1981 restricted parents living with adult children and boarders from qualifying as separate households. The intention was to prevent families claiming to purchase and prepare food separately from forming separate households to attain larger food stamp benefits. The Omnibus Reconciliation Act of 1982 also sought to cut the Food Program budget. This act ended eligibility for most post-secondary students and strikers, and it required siblings living together to form one household regardless of whether they purchased and prepared their meals together.

The next major change to the program occurred in 1985 when Congress passed the Food Security Act. This act reauthorized food stamp appropriations and liberalized food stamp rules.

New initiatives included a requirement for states to implement employment and training programs for food stamp recipients, a prohibition on collection of sales taxes on food stamp purchases, and automatic food stamp eligibility for AFDC and SSI recipients. Benefits were raised for some disabled recipients and for some recipients earning money.

In 1987, Congress passed the Stewart B. McKinney Homeless Assistance Act, which amended the food stamp household definition to permit parents of minor children living with another sibling or parent to apply as a separate household if they purchased food and prepared meals separately. The Hunger Prevention Act of 1988 increased food stamp benefits unilaterally, eased program access and administrative rules, and restructured the employment and training program. Among other things, the 1988 act authorized 50 percent Federal cost sharing for state-option outreach activities and required coordination with the cash welfare program application procedures, among other things.

Most recently, the 1990 Food, Agriculture, Conservation, and Trade Act introduced legislation affecting the Food Stamp Program. Due to budget constraints, there were minimal expansions to the program. Some of these amendments included some changes in administrative rules to open up program access and strengthen penalties for trafficking, expansion of the employment and training program, limited revisions for post-secondary students, and new pilot projects and study commissions for welfare program coordination and electronic benefits transfer (EBT). A key provision contained in the Farm Bill is that as of April of 1992, the states may implement cost neutral alternative issuance systems.

b. Participant Characteristics

The Food Stamp Program is aimed at augmenting the food purchasing power of eligible low-income households in order for them to buy a nutritionally adequate low-cost diet.

Participants are expected to contribute 30 percent of their counted monthly cash income to food purchases, and food stamp benefits make up the difference between the participants' expected contribution to food costs and the amount determined by the U.S. Department of Agriculture to be sufficient to purchase an adequate, low-cost diet. Food stamp benefits are available to nearly all households which meet Federal guidelines for financial, employment and training, and categorical eligibility tests. Furthermore, those currently receiving Aid to Families with Dependent Children (AFDC) or Supplemental Security Income (SSI) are usually automatically eligible for the Food Stamp Program.

Generally, a "food stamp household" consists of individuals who reside, purchase food, and prepare food together. Individuals who constitute a food stamp household must apply for food stamps together. That is, the individuals' incomes, expenses, and assets are combined to determine the household's eligibility and monthly food stamp benefit. Usually, relatives must apply for benefits as the same household.

However, individuals or family units living together may sometimes apply as separate food stamp households, and they each receive their own food stamp benefit. Unrelated persons who purchase and prepare food separately may apply separately for benefits. Elderly persons living with relatives who cannot purchase and prepare food separately due to a disability may apply separately, given that they meet the financial requirements.

To financially qualify for food stamp benefits, a household must have a monthly income and liquid assets below limits set by food stamp law. The counted (net) monthly income is calculated to determine eligibility. To establish eligibility for households without an elderly or disabled member, both the basic (gross) and counted (net) monthly incomes are used. However, to determine eligibility for households without an elderly or disabled member, only the counted income is used.

Basic or gross income includes all of a household's cash income. However, there are some exclusions to basic income, among some of these are loans, income received for the care of someone outside the household, income earned by school children, the cost of producing self-employment income, and unanticipated, irregular, or infrequent income, up to $30 a quarter.

Counted or net income is computed by subtracting certain deductions from a household's basic monthly income. For households without an elderly or disabled member, the deductions from basic income are: an inflation-indexed (each October) "standard deduction" set at $116 a month in fiscal year 1991; 20 percent of any earned income, in recognition of taxes and work expenses; out-of-pocket dependent care expenses, when related to work or training, up to $160 a month for each dependent; any shelter expenses, to the extent they exceed 50 percent of counted income after all other deductions, up to an inflation-indexed ceiling set at $186 a month in fiscal year 1991. For households with an elderly or disabled member, the same standard, earned income, and dependent care deductions as above apply, and other deductions include any shelter expenses, to the extent they exceed 50 percent of counted income after all other deductions, with no limit, and any out-of-pocket medical expenses that are incurred by an elderly or disabled member, to the extent they exceed a threshold of $35 a month.

In addition to income criteria, recipients must have counted "liquid" assets that do not exceed Federally prescribed limits. Except for households automatically eligible for food stamps because they receive AFDC or SSI, households without an elderly member cannot have counted liquid assets above $2,000, while households with an elderly member cannot have counted liquid assets above $3,000.

Counted liquid assets include cash on hand, checking and saving accounts, savings certificates, stocks and bonds, and individual retirement accounts. Other "less liquid" assets are also counted, such as a portion of the value of vehicles and the equity value of property not

producing income consistent with its value. The values of a recipient's residence, business assets, personal property, and burial plots are not included in counted assets.

Besides financial eligibility requirements, the Food Stamp Program also has employment and training related and "categorical" tests for eligibility. The employment and training tests require that certain household members must register for work, accept suitable job offers, and fulfill work or training requirements established by state welfare agencies. Furthermore, there are a number of categorical rules which automatically grant or deny benefits to certain groups of people. Most people receiving AFDC and SSI are automatically awarded food stamp benefits. However, those people who are strikers, illegal or temporary resident aliens, or institutionalized are denied food stamp benefits.

In 1990, approximately 20 million Americans participated in the Food Stamp Program, representing about 8 percent of the total U.S. population. According to several 1984 studies, certain demographic groups were more likely to participate. Most families receiving AFDC also receive food stamps. However, participation rates for households with elderly members were lower.

c. Program Characteristics

The regular Food Stamp Program, administered by the Food and Nutrition Service (FNS), operates in all 50 states, the District of Columbia, Guam, and the Virgin Islands. In these areas, the Federal Government is responsible for virtually all of the rules governing the program. Alternative programs are offered in Puerto Rico and the Northern Mariana Islands.

The FNS and other Federal agencies have roles in the administration of the Food Stamp Program. One of the FNS's responsibilities is to establish guidelines and regulations for the

state welfare agencies to follow. The FNS defines eligibility requirements, benefit levels, and administrative rules. The FNS also prints food stamp coupons and distributes them to welfare agencies and approves and oversees participation by retail food stores and other outlets. Other Federal government agencies assist the FNS with the administration of the Food Stamp Program: the Federal Reserve System redeems foods stamps for cash; the Social Security Administration provides social security numbers for recipients, provides limited application "intake" services, and provides information to verify recipients' incomes; the Internal Revenue Service provides assistance in verifying recipients' incomes and assets; the Immigration and Naturalization Service confirms alien applicants' status.

The local welfare agencies of the states have responsibility for virtually all of the client-oriented administration of the Food Stamp Program. Essentially, they are responsible for the day-to-day management of the program. State local welfare agencies determine eligibility, calculate benefits, and issue food stamp allotments, while following Federal guidelines. Furthermore, these local agencies have a major role in carrying out employment and training programs, and they have some say in the administrative features of the program, such as the method by which food stamps are issued.

The Food Stamp Act allows certain program options. For example, they authorize demonstration projects to test program variations that might improve operations. Or, states are allowed to require "monthly reporting" and "retrospective budgeting" for parts of their food stamp caseload.

For the most part, funding for the Food Stamp Program is the function of the Federal Government. The Food Stamp Act provides 100 percent Federal funding of food stamp benefits. The Federal Government is also responsible for its own administrative costs, such as overseeing

program operations, printing and distributing food stamp coupons, or redeeming food stamp coupons through the Federal Reserve.

States and other jurisdictions have financial responsibility for significant administrative costs and liability for erroneous benefits determinations. Basic day to day administrative costs are shared equally between the Federal Government and the states. The cost of optional outreach activities is eligible for a 50 percent Federal match. Furthermore, the cost of employment and training programs for food stamp recipients is split between the Federal and state governments: each state (or other jurisdiction) receives a Federal grant for basic operating costs (a formula share of $75 million), and additional employment and training program operating costs are eligible for a 50 percent Federal matching share.

Food stamp benefits are issued as a coupon booklet. The smallest coupon denomination is $1. If change of less than $1 is due on a food stamp coupon, it is given in the form of cash. Food stamp coupons are most often used to purchase food items for home preparation and consumption. Other approved uses of coupons include seeds and plants for use in gardens to produce food for personal consumption, meals prepared through approved communal dining programs for the elderly and SSI recipients, and meals prepared and served to residents of drug addiction and alcoholic treatment programs or shelters for battered women and children. Food stamps are not allowed to be used for purchase of alcohol, tobacco, or hot foods intended for immediate consumption.

The Food Stamp Program interacts with other cash assistance programs. It is administratively linked to cash welfare aid at the state and local levels, and its recipient population is made up largely of recipients of other government benefits. The same welfare offices and personnel administer the Food Stamp Program, AFDC, and general assistance. Usually, applicants jointly apply and interview for food stamps and other income support;

however, this co-administration does not extend to most elderly or disabled persons because their SSI cash assistance is usually administered through the Social Security Administration.

2. Electronic Benefit Transfer and the Food Stamp Program

In this section we examine a variety of topics and issues regarding Food Stamp EBT. These topics and issues include:

- Food Stamp EBT Demonstration programs in the United States
- Possible development paths for nationwide EBT systems
- EFT technology and food stamp EBT
- State EBT implementation
- Alternative forms of food stamp benefit delivery
- The EBT players
- Description, history, and future of EBT in other benefit programs

a. Food Stamp EBT Demonstration Programs in the United States

To date, the Food and Nutrition Service has sponsored eight EBT research and demonstration programs for Electronic Benefits Transfer, and four cash out demonstration programs. EBT programs include demonstrations that employ both on- and off-line technology and involve one to five public assistance programs. Cash out programs can also involve numerous programs. EBT demonstration cites, type of demonstration, type of technology, and number of programs involved are displayed in Exhibit I-1. This section describes the major demonstration programs through the United States, including a description of each demonstration, and opinions of Food Stamp Directors from each state as follows:

Exhibit I -1. EBT Demonstration Programs in the United States

Demonstration	Type	Technology	Number of Programs
Ramsey County, MN	EBT	On-line	5
Albuquerque, NM	EBT	On-line	3
Dayton, OH	EBT	Off-line	1
Maryland	EBT	On-line	4
Reading, PA	EBT	On-line	1
Camden, Essex, Hudson, NJ	EBT	On-line	2
Cedar Rapids, IA	EBT	On-line	2
Wyoming	EBT	Off-line	1
Washington	Cash out	N/A	2
San Diego	Cash out	N/A	1
Alabama	Cash out	N/A	1
Alabama ASSETS	Cash out	N/A	1

- Ramsey County, Minnesota. Ramsey County, the largest county in Minnesota, has an EBT demonstration program that combines the largest number of programs on one system of all of FNS's demonstration programs. Although the Food Stamp program is not presently part of the system, Aid to Families with Dependent Children has been operating for the last few years. The Ramsey County EBT system allows cashing out of Supplemental Security Income for up to 9,500 assistance program recipients, and when fully operational will allow 13,000 food stamp recipients to receive their benefits at 265 POS terminals in the region.

  Minnesota officials have indicated that the most important aspect of EBT to consider is the cost of the system, which may be prohibitively high if only one program is included on the system. This will be detailed in Section I-9.

- Albuquerque, New Mexico. Albuquerque, the largest county in New Mexico, has an EBT program that encompasses food stamps, AFDC, and child support programs. The demonstration covers 11,000 food stamp recipients and 5,000 AFDC households. The system, which is integrated with a major bank that

serves as operator and clearinghouse, allows recipients to draw cash assistance through the local ATM network or through one of 280 POS-equipped retailers. New Mexico officials have indicated that their system cam be strengthened with improved control over the operator/clearinghouse bank and with better cost/ benefit analysis techniques.

- Dayton, Ohio. Dayton, Ohio is currently in the process of establishing an EBT system that will utilize off-line smart card technology. The smart card will contain a 64K computer chip for off-line processing. The system is currently in development (officials have indicated the system will start before the Spring 1992 projected start-up date), and will be operated by the National Processing Corporation.

- Maryland. Maryland is currently operating a food stamp/AFDC combination EBT system in the Baltimore area, and plans to expand that program to the entire state. The program, owned by the state, is mandatory for all participants, and all recipients must complete a training session. Benefits are delivered for all programs on a single card through the local ATM network and through POS devices. Maryland officials have indicated that the major problems in the system to date have been that the costs of the system have been exceptionally high and that the costs of operating only one small district far outweigh any savings. It is necessary to have a large recipient base in order to realize any cost savings. Projections have indicated that when the system becomes more widespread, almost $2 per recipient per month may be saved.

- Reading, Pennsylvania. This seven year old program serves approximately 7,000 of 8,509 eligible households in Reading, Pennsylvania. Although the present EBT system in Reading involves only the Food Stamp Program, Pennsylvania is considering expanding the system to include AFDC and General Assistance (GA). The program eliminated mail losses, coupon handling costs, and coupon production costs and reduced theft, although it was more expensive than the paper system. State officials have indicated that any system operator vendor must be carefully watched to insure that the state's benefits program is operated according to state guidelines. In Reading, vendor experiences with welfare recipients were unacceptable to the state, leading to a state agency takeover of the process.

- Camden, Essex, and Hudson Counties, New Jersey. These three largest counties in New Jersey are still in the process of preparing an RFP for an EBT system which will combine Food Stamp and AFDC Programs. The purpose of the New Jersey project will be to test EBT in low-income areas.

- **Cedar Rapids, Iowa**. Cedar Rapids, Iowa has had an EBT demonstration program for its AFDC recipients for two years, and is almost ready to integrate the Food Stamp Program. The program is government owned, with voluntary participation. Recipients are permitted to use existing ATM and POS terminals to withdraw their benefits. This system is the only demonstration program that is integrated with an existing commercial system, but is facing severe budgetary cuts which may hinder future development of the state's participation in the system.

- **Wyoming**. The current EBT demonstration program in Wyoming is focused solely on the Women, Infants, and Children Program. Presently the system uses off-line technology, but since the state is sparsely populated, state official are cautious about adding new programs to the system.

- **Washington**. The State of Washington utilizing EBT operations of its Family Independence Program, which fills the functions of the AFDC program, provides incentives for education and employment, provides work training, and cashes out the state's Food Stamp Program. The program is in 15 test cities. The pilot program delivers benefits to approximately 10,600 food stamp households, 12,700 cash assistance households, and 27,500 Medicaid households. Recipients use access cards to obtain grant benefits through 140 ATMs in the ACCEL network, and food stamp benefits are available through POS terminal at 406 stores.

- **San Diego, California**. San Diego, California, is presently operating a cash-out program of its food stamp and AFDC operations. Each month, recipients from both programs receive one check, which combines their benefits for both programs. San Diego would like to integrate the system with a local ATM network, allowing recipients to receive funds through ATMs rather than by check. The program and alternatives are currently being evaluated by FNS.

- **Alabama Cash-out**. The Alabama cash-out demonstration program has 2,100 households receiving food stamps as cash for eight months. The program will subsequently be evaluated by comparing household expenditures and food use of this group to a control group not participating in cash-out.

- **Alabama ASSETS**. The Alabama ASSETS (Avenues to Self-Sufficiency through Employment and Training Services) program is allowing households participating in three program sites to cash-out their food stamp benefits. Food consumption and expenditures of these recipients will be compared to a similar group that does not cash-out food stamp benefits.

b. Possible Development Paths for a Nationwide EBT System

Once the Food and Nutrition Service has determined that development of a nationwide Electronic Benefits Transfer (EBT) system is a desirable goal, there are three alternative approaches to implementation of such a system:

- Multiple Design Approach. Each state is allowed to develop its own EBT system based on specified system functional, program, and/or performance specifications established by FNS.
- Standardized Design Approach. Similar to Multiple Design, except FNS also requires each system to conform to a set of design parameters.
- Unitary Design Approach. FNS develops and operates an entire national system, bypassing development and operations by states.

Each approach has advantages and disadvantages from the viewpoint of FNS policy objectives, financial objectives, and from overall technical feasibility. A more detailed description of each approach as well as their advantages and disadvantages are provided below.

i. Multiple Design Approach

The multiple design (MD) approach to development of a nationwide system is in keeping with a philosophy of maximum state autonomy in not only the decision to use EBT, but in allowing states to design systems which fit their policy objectives and system goals. It is the approach used in demonstration programs throughout the country. Under the MD approach, FNS specifies what the system must do, and possibly how it must perform, but the decision of how to design the system and whether or not to even utilize an EBT system is left up to individual states.

Under the MD approach, each state develops its own EBT system either on its own or with the assistance of a contracted vendor. Although many of the resulting states' systems will be similar in several respects (due to the fact that they will be required to meet general functional requirements set by FNS and are most likely to use existing commercial POS software), differences would arise due to the fact that each system would be put together by a different vendor and/or state, and that each system would be designed to meet the individual needs of its states. Some of differences in these systems could include:

-- Use of on- or off-line EBT technology
-- Benefit programs included
-- Degree of integration with commercial systems
-- Entity which authorizes transactions
-- Treatment of manual back-up procedures
-- Hardware, software, and telecommunications configurations

These differences are described below.

- <u>On-line or Off-line Technology</u>. Although most demonstration programs in the U.S. use on-line technology, both on- and off-line technological options offer advantages and disadvantages. An on-line system utilizes a centralized computer responsible for all transactions at the time of the transaction. For example, when a food stamp recipient wishes to make a transaction, s/he uses a debit card at the point of sale. A point of sale (or POS) terminal machine immediately transmits data received from the debit card (and the user's personal identification number) to a central 'host' computer, which authorizes the transaction and notifies the terminal whether or not the transaction is authorized or denied. The host computer contains information regarding the availability of a recipient's funds, and updates that information as necessary. The host computer also credits the retailer's account. If a request for cash disbursement through an ATM is involved in the transaction, the host computer also authorizes cash to be distributed. Furthermore, the central computer periodically reconciles its accounts with Federal accounts. Some states may adopt Reading-like stand-alone systems, but given the high front-end cost of this approach, integrating with an existing EFT bank and switching systems is likely to dominate.

An off-line system requires more information at the point of sale. For example, when a food stamp recipient wishes to make a transaction, s/he presents a debit card at the point of sale. However, in contrast to the terminal/host computer scenario described above, the debit card itself acts much like the host computer. The card (which can be a magnetic stripe, integrated circuit or 'smart' card, laser card, etc.) contains information regarding the availability of funds and the user's identification number. The point of sale terminal reads this information, authorizes or denies the transaction, updates the debit card, and stores a log of all transactions during the day. At off-peak hours, the POS terminal transmits this data to a centralized host computer. The information is then passed along to financial institutions as it would be under an on-line system.

An on-line system offers the advantage of centralized information on account balances, and is thus less susceptible to fraud, but can be slower than an off-line system. An off-line system can work more rapidly and in places where telecommunication technology is not advanced, but if code on the debit cards can be replicated, the system would be susceptible to fraud. Also, off-line terminal equipment is more expensive, and stolen off-line debit cards would be difficult to trace.

- Benefit Programs Included. Although many of the demonstration programs throughout the country encompass only one Federal assistance program, most states planning to utilize EBT technology plan to eventually reap the economies of scale offered by including multiple assistance programs on a single EBT system. Programs that could also utilize EBT technology include:

  -- Aid to Families with Dependent Children (AFDC)
  -- General Assistance (GA)
  -- Refugee Assistance (RA)
  -- Social Security
  -- Medicare
  -- Child Support
  -- Emergency Housing Assistance
  -- Supplemental Security Assistance (SSI)

  Under the MD approach, each state could decide which programs to include on its EBT system, provided that Federal agencies approve of including programs they fund on the system. However, certain difficulties could arise in including multiple programs on one network, since some programs have cash use restrictions that others do not (i.e., food stamp benefits might not be available through ATMs as cash, while Social Security benefits might be).

- **Degree of Integration with Commercial Systems**. Another major design decision for states wishing to utilize EBT technology is the extent to which the state will integrate its system with existing commercial ATM and POS networks. Such service would improve service to participants by allowing access to existing ATMs. Furthermore, the private sector keeps up with state-of-the-art technology to a greater extent than government. Integration would also lower development and start-up costs to the government, since the system would either use the existing POS terminals and commercial telecommunications facilities or would be able to share the costs of development and start-up with the private sector.

  Almost all state officials we interviewed indicated that their state would not consider development of EBT systems without participation by the private sector. Most states plan to allow the private sector develop ATM/POS technology on its own, and add its benefit programs when the commercial networks have matured. These states have indicated numerous reasons for this reluctance to develop ATM/POS technology on their own, including:

  -- It is still unclear whether the POS market offers cost savings
  -- Start-up costs are extremely high
  -- Technology has not matured
  -- The private sector will develop this market on its own

- **Entity Which Authorizes Transactions**. State Agencies that have selected an EBT system design must decide the entity which will operate the system; that is, the Agency or an outside contractor. If a vendor operates the system, it will acquire and authorize EBT transactions, switch non-EBT transactions to other authorizers if the system is integrated with a commercial network, and settle the system accounts. The vendor must be responsible for incoming transactions from multiple acquirers (if necessary) and its own retail terminals. The vendor must also be responsible, if necessary, for authorizing transactions for the assistance programs as well as routing some transactions to card-issuing institutions which authorize their own transactions. Under this model, the state's main involvement is generation of an Issuance File, which provides details of those who are eligible to receive benefits. The vendor under this model could be either a network switching vendor, a financial institution, or an acquirer. The vendor and acquirers perform all retailer EBT settlement activities in this model, including reconciliation and posting.

  If the state authorizes transactions, the switching process stays as described above, with the exception of the Client Authorization File. Under this model, the vendor routes transactions involving assistance programs in the same fashion as

it routes transactions to card-issuing institutions which authorize their own transactions. The vendor routes assistance transaction to the state's data processing center, which authorizes or denies the transaction. In the Agency Authorization Model the vendor, the Agency, acquirers, and the other financial institutions must maintain information for network settlement and retailer posting at the end of each day.

- Manual Back-up Procedures. Since Food Stamp Program recipients must have access to their benefits even if the EBT system is down or terminals are not working, a manual backup system must be in place to insure recipients are able to receive their benefits. Manual authorization can take the form of authorization of eligibility, sales, and/or balance in the recipient's account. States could also set a limit on the total amount purchased at one transaction or one day or the amount of a purchase that requires manual authorization. Also, telephone systems and/or Audio Response Units could be used to determine authorization. FNS could avoid overdrafts that may occur in this system through design standards or by limiting its liability for overdrafts.

- Hardware, Software, and Telecommunications Configurations. Even if EBT systems designs were similar in all operational aspects, they could be based on different hardware, software, and telecommunications configurations. For example, some states may use commercially developed technology, while some may develop their own. More likely, telecommunications hierarchy, transmission speeds, and message formats and technologies would differ from state to state. Also, any type of commercial POS and mainframe hardware could be used in establishing the EBT system. Interviews with state officials indicate that most states will not develop their own technologies, but will integrate with existing commercial systems. Thus, the most likely difference between state systems will be the types of information stored, and the formats in which that information is kept at the state level. However, it is important to note that all information necessary to balance Federal accounts will be similar. Interchange between states, where recipients could receive their benefits in any state, could occur only if FNS coordinated numerous aspects of information transfer and format, and states coordinated their use of switching networks. This type of information exchange can be extremely difficult under the MD approach.

ii. Standardized Design Approach

The Standardized Design (SD) approach to developing an EBT system with nationwide coverage is similar in most respects to the MD approach. Under SD approach, FNS would specify functional and special program requirements for each EBT system, and possibly performance requirements. States would be given the decision of whether or not to utilize an EBT system. Unlike the MD approach, the SD approach would specify some required design parameters. Reasons for restricting design approaches include:

- Ensuring the Availability of Interchange. In order to achieve interchange between states, FNS must specify certain design elements for each state's system. These design elements would include such items as the format of information within the debit card and the format of messages sent between the terminal and the switches. System aspects which must be controlled are described in the ABA guidelines for POS debit systems.[1] Although FNS could require system specifications which are different from the commercial norms, this would necessitate a stand-alone system. Interviews with state food stamp program directors have indicated that due to cost considerations, a stand alone system would be far too costly, and 'piggy-backing' on private sector systems is the preferred (or the only possible) route.

- Ensuring Compatibility with Commercial POS and ATM Networks. If FNS adopts the ABA guidelines referred to above, compatibility with existing networks should not be complicated. However, it should be noted that although most commercial networks are presently conforming to or are planning to adopt the ADA standards, not all systems nationwide conform to the standards. Although this does not prevent interchange, it makes it more difficult.

- Protecting System Integrity. In order to protect against fraud, FNS may choose to adopt certain guidelines to protect the system's integrity. This could entail:

[1] ABA guidelines include standards for the use and format of a cardholder's Primary Account Number (PAN); physical characteristics of the access card; content and format of encoded information; message formats; information codes; personal identification number (PIN) generation, assignment, delivery and issuance, and replacements; PIN pad key layout; and PIN encryption and verification procedures.

- -- Verification of the card user's identity
- -- Verification that the terminal POS is at an authorized retailer
- -- Reconciliation of benefits posted to a recipient's EBT account
- -- Reconciliation of daily transactions against recipients account balance
- -- Restriction of access to the system
- -- Periodic review and audits
- -- Training requirements

- <u>Protecting Retailer and Recipient Interests</u>. In order to insure that retailers and recipients will accept the EBT system, it may be important for FNS to adopt guidelines to assure their interests are represented. Such guidelines include:

  - -- Minimum transaction time
  - -- Minimum time for credit to retailer account
  - -- Maximum system down time allowed
  - -- Guarantee of credit to recipient's account on a certain day of the month

- <u>Improving Cost Effectiveness</u>. FNS might find that some system designs are the most cost effective, and require their use. For example, an SD approach mode most likely mandate either a on-line or off-line system, since it would be extremely costly to operate POS terminals that could handle both systems (i.e., an on-line terminal that can read a smart card or an off-line terminal that can communicate with a national network during the regular work day).

iii. <u>Unitary Design Approach</u>

Both the Multiple and Standardized Design approached to developing a nationwide EBT system require that each state Agency develop or procure the means to authorize EBT transactions initiated at POS terminals and to settle these transactions. In the Unitary Design (UD) approach, FNS would bypass much of the development and operations effort at the state level and would develop and operate a national EBT system.

A unitary EBT system could involve either centralized or regional authorization of EBT transactions. In a centralized system, all POS transactions would be sent either directly or via switching mechanisms to a national central computer for authorization. In a regional system,

a single processor within each region would be responsible for maintaining the EBT database for all food stamp recipients within that region. In this system, the regional processor would also have to act as a switch for transactions that involve a recipient outside of his/her region and would also have to upload its information to a national mainframe. In both systems, the national processor would settle each day's activity by processing the day's transactions and initiating a funds transfer from the U.S. Treasury to depository institutions. Under the UD approach, states would be responsible for sending EBT issuance authorization files to the central or regional processor.

The UD approach allows the advantages of uniformity of data, reports, and administrative functions. It would also facilitate the reporting of EBT system activity to FNS national headquarters and regional offices. However, there seem to be numerous obstacles to this approach, including:

- This approach is counter to the approach used in many of states operating demonstration programs
- FNS would be in charge of many functions better operated on a local level, such as training and retailer recruitment
- The cost to the Federal government could be exceedingly high, as it would be in charge of all system aspects

iv. The Possibility of Non-statewide Implementation

The available FNS reports on nationwide feasibility clearly suggest that states will implement EBT on a state-wide basis. Where there is allowance for staged implementation, the expectation is that 100 percent EBT is the logical outcome of any of the three systems approaches describes above. However, analysis of current EFT network spacial distributions, the concentration of food stamp participants, and the expressed need by states to 'piggyback'

suggest that this may not occur as quickly as anticipated. Interviews with state officials conducted as part of our preparation for this proposal confirm that many states agree that although EBT systems are likely to be most efficient in densely populated areas with high concentrations of merchants, recipients, and EFT penetration at the merchant level, in more rural areas the current paper system may be the most efficient means of benefit distribution.

c. EFT Technology and Food Stamp EBT

The electronic infrastructure for processing payment transactions generally involves debiting one account and crediting another is referred to an electronic funds transfer (EFT). EFT in its simplest form allows the consumer's and the merchant's bank to communicate through an intermediary. These intermediaries include Automated Clearinghouses (ACH) and more recently networks that tie financial institutions together. The banked consumer participates in this system when checks written to a merchant are forwarded to an ACH and funds are transferred from the consumer's account in one bank to the merchant's account in another bank. However, check cashing (and to a lesser degree coupon processing) has costs associated with processing and collections for checks written in excess of balance available in the account. In recent years, largely in an effort to speed the transfer of funds, to increase the efficiency of payment processing, and to improve customer services, financial institutions have installed automated teller machines (ATMs) and point-of-sale (POS) debit terminals in rapidly increasing numbers. ATMs permit the banked consumer to perform the less complicated functions of balance-available checking, transfer of funds between accounts at a single bank, and direct debit cash withdrawals. ATM networks were originally bank-specific, but quickly advanced to regional systems and national systems such as PLUS and CIRRUS. In 1990, it was estimated that approximately 500 million ATM transactions were made each month using ATMs. POS terminals, while having the potential to support similar activities, are most often used to process transactions against credit accounts such as VISA or Mastercard. Increasingly, they are being

used as a way of direct debit against customer accounts; in effect replacing check writing. Recent efforts by Mobil and Exxon to incorporate direct debit POS as a purchasing option in all their gasoline stations demonstrate the potential of this system. One important point is that the software used for ATMs is significantly different from that used to drive POS systems.

What makes these systems attractive from an EBT standpoint is the fact that the networks that have developed to support ATM and POS interconnect many banks. It is these shared networks that make EBT possible for food stamps and other state-administered and Federally administered benefit and retirement payment systems that serve large numbers of unbanked recipients. The key to making EBT work is access to a data base containing appropriate authorizing and "account" balance-available data and uniform use of a standard set of rules governing access and communication.

In this section, we provide a summary of the ATM/POS technology.

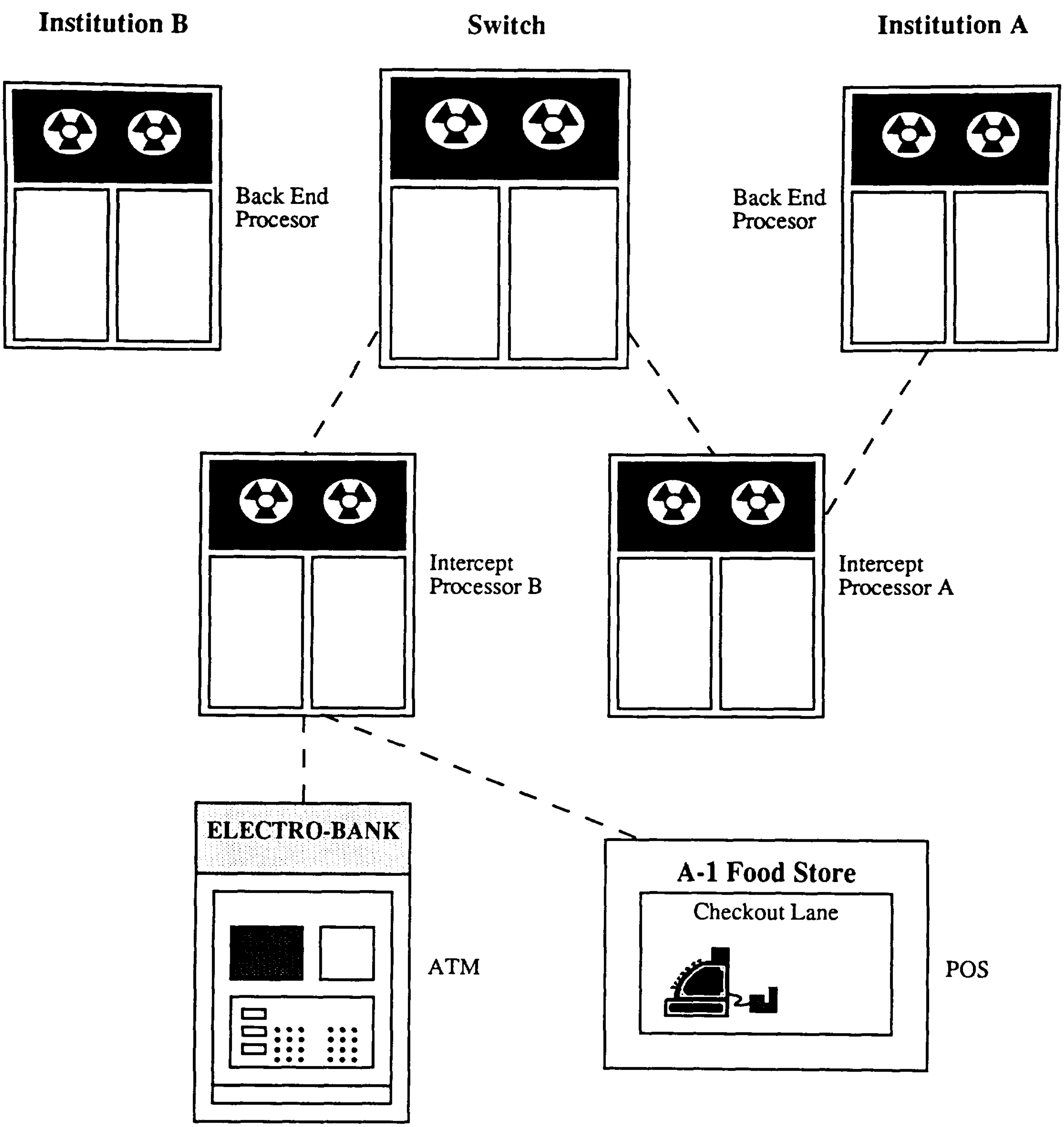
i. Shared Networks

The EFT systems of interest -- shared networks -- consist of four basic components:

- ATMs and POS terminals
- An Intercept Processor
- A Network Switch
- A Back-end (or Account) Processor

These components are displayed in Exhibit I-2. The ATMs are account-holder operated and therefore conform to Regulation E guidelines controlling access to account information. Because POS machines are not typically account-holder operated, especially in food stores, there are potential problems associated with the display of balance remaining and print outputs. The

The Shared System: ATM/POS Networks



ATM is accessed by a plastic card with a magnetic stripe containing a unique account number and encrypted personal identification number (PIN) all conforming to industry standards. In an on-line EBT configuration, this card would be technically identical to any banked customer's card except for the decorative non-embossed non-stripe information on the card.

The ATM is connected via telephone line to the Intercept Processor which contains the software needed to drive the ATM. The intercept processor may be a financial institution or a third-party data processing vendor. The intercept processor provides the following functions:

- Handles reporting and performs ATM monitoring, diagnostics, and notifies the operator of out-of-service conditions.
- Authorizes cardholder transactions and provides reporting, maintains system parameters, interfaces with the back-end processor, and routes transactions to and from the switch.

The software needed to perform these functions is readily available (off the shelf) and no longer requires extensive specialized code development.

The Network Switch is essentially a complex electronic communications signal processor. It routes all shared transactions except those that are proprietary (within the institution that may operate the switch) and acts as a network "traffic cop." Switches can be provided by data processors that are owned by a network entity, a financial institution, or a third-party data processing vendor. The switches charge a per transaction fee for each transaction that uses the network to communicate with the account bank.

Finally, the Back-end Processor is the data processing service used to maintain cardholder balances, post settlement information, approve or provide information needed to approve transactions, and is responsible for hold placement, Regulation E compliance, and customer

service which includes card issuance. Typically the Back-end Processor is the account-holder's bank or a third-party data processing vendor under contract with the bank. In a food stamp EFT context, this is likely to be the State Agency or a processing contractor under contract to the state.

The actual mechanics of an ATM/POS transaction involve the following sequence of events, all of which conform with existing standards (though functions offered may vary depending on what the member institutions want to offer customers. After the customer (or the clerk in a food store) initiates the transaction at the terminal by swiping the card and entering the account-holders PIN (in a food store, the customer would do this, not the clerk), the following occurs:

- The ATM/POS terminal communicates the card account and PIN (encrypted), transaction type, and dollar amount to the intercept processor which in turn communicates it to the switch, the switch to another intercept processor, which communicates to the appropriate back-end processor.

- The transaction is approved or denied based on insufficient funds to cover the transaction and the funds are disbursed or the funds are authorized for transfer to the merchants account.

- Each evening, these transactions are accumulated and settled between financial institutions. That is, the terminal owner and the card issuer bank/agency transfer funds to achieve a zero net balance.

- The transaction is posted to the customer's account by the morning of the next day.

- Subsequently, the intercept processors reconcile the transactions.

While this system can fail at any of the four key points, an operational status in excess of 95 percent is routinely achieved. Using these networks to effect EBT transfer would require

integration of network standards and ensuring that functions fit within existing parameters or can be accommodated.

ii. The Food Stamp EFT Model

The system generally considered for food stamps that would operate independently (stand-alone) is somewhat different from that described above. As shown in Exhibit I-3, in this system, a central processor maintains both the recipient's and the merchant's accounts, credits the recipient with each month's allotment based on updates from a state data base. In this configuration, the in-store terminal communicates with the central processor, checks balance available, and either debits the account or receives a signal indicating insufficient funds. Assuming the transaction occurs, the merchant's account is credited. Periodically, the merchant's credits are consolidated. At the end of the day, data are transmitted to the ACH and through the ACH to the Federal Reserve where information is sent to the retailer's bank crediting their accounts and the bank managing the food stamp fund account is debited. Subsequently, this bank initiates a request for reimbursement from FNS's letter of credit at U.S. Treasury.

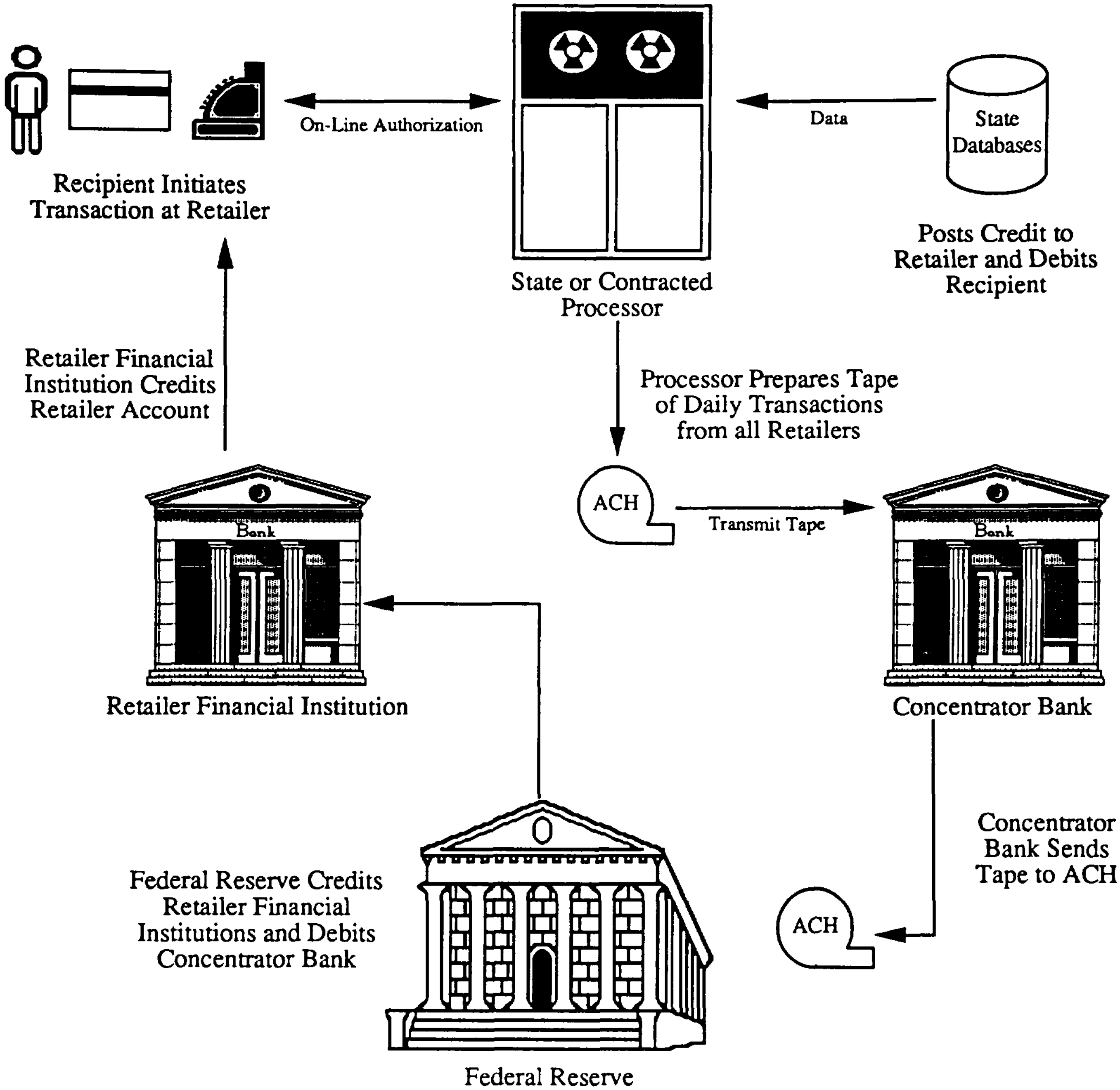
The networks described above could simply act as the telecommunications link between the vendor and the processor, providing terminals, intercept processing, and reconciliation, resulting in a somewhat simplified system.

iii. On-Line and Off-Line Systems

One of the issues shaping EBT is concern about whether off-line systems are more efficient at the store level than on-line systems. The concern stems largely from fears about transaction times and system down-time. Information about the cost of each strategy is generally

Exhibit I-3

Food & Nutrition Service Letter of Credit Funding Flow



Source: From Paper to Plastic: The Electronic Benefit Transfer Revolution, FMS, Department of the Treasury, 1990.

poor and does not inform decisions about which approach to use. Off-line systems accumulate transactions at the point of sale during the operating day. This information is then accumulated and transferred electronically to the ACH. This system is much like check processing where the stores scan the MICR code on checks. The ACH, in concert with the Federal Reserve process this information, applying debits against customer and program participant accounts and credits to the merchant's account. Vons Grocery Company in Los Angeles is an example of this. The arguments in favor of this off-line direct debit approach are that it provides faster check-out times than those offered by on-line systems, allows the store to control which networks it wants to use, and it allows the merchant to offer the same degree of float associated with check writing. Some food stores have invested in off-line technology using their own proprietary debit card system. However, these benefits are generally offset by the cost of issuing cards, maintaining data bases, and collecting for funds in excess of balance available. Moreover, on-line transaction times are improving and the cost of on-line connections is approaching that of off-line connections. Lastly, on-line systems provide much more powerful control of fraud and abuse.

iv. Smart Cards

An alternative form of benefits transfer is the smart card, a card capable of storing data and having data contained on the card changed by authorized read/write systems operated in stores as well as at banks or local welfare offices. Smart cards are typically off-line systems since the card itself contains authorization and benefit-available (current balance) information. The in-store smart card stores data and transmits the accumulated information to a master file. Updating of monthly benefits and eligibility status must be done to the card, requiring visits to local welfare offices or other issuance office. Smart cards have great promise for WIC which must capture extra data.

d. Stages of EBT Implementation

Recently, FNS released a contractor-prepared report outlining the major activities a state must manage when establishing an EBT system. Without evidence to the contrary, we assume that this report reflects the implementation logic that FNS intends to follow over the next four to five years. As such, this logic will shape the assistance provided in the proposed effort. These stages, described in Exhibit I-4, are system design, system prototype, system testing, and implementation. This section summarizes each of the steps, and many of the tasks required for completion of the major steps. However, our extensive interviews of state food stamp officials in the 48 states indicated that most states will need technical assistance in areas well before the system design stage. The final subsection focuses on another, initial, stage of implementation, the decision to use EBT, in which many states will need technical assistance.

i. System Design Activities

The design stage is one of the most critical phases in the process of establishing an EBT system. The system design will determine what program functions the system will perform and essentially how well the system will perform. The process involves five sequential steps:

- Assembling an EBT Project Team
- Choosing an EBT system model
- Defining the system's functional and performance requirements
- Preparing a system design
- Reviewing the system design plan

Each of these steps is described below:

- Assembling an EBT Project Team. Regardless of the state's decision to conduct most of the design work on its own or by means of a private contractor, each of

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Four Stage Implementation Process

System Design

- Assemble EBT Project Team
- Specify general features of design
- Define system's functional requirements
- Detailed system design
- Design review

System Development

- Write and debug system software
- Prepare equipment
- Prepare communications facilities
- Test the system
- Document system design and operating procedures
- Prepare for EBT implementation

System Testing

- Prepare acceptance test plan
- Prepare acceptance test script
- Prepare acceptance test
- Conduct acceptance test
- Evaluate test results

Implementation

- Training of FNS personnel
- Retailer preparation
- EBT system start-up
- Training of recipients
- Monitoring start-up and phase-in operations
- Transition to steady-state operations

these steps must be completed and the state must choose an EBT Project Team that will oversee system design, development, testing, and implementation. This Project Team will need not only experts in the Food Stamp Program requirements, program operations, and state computer systems, but members who have an understanding of POS/ATM technology, Federal and state laws that might affect implementation, and experts in industry ATM/POS design and implementation standards.

- Choosing an EBT System Model. The state must also choose what type of system it will use, which programs will be on the system, and whether the system will be integrated with existing or developing commercial systems. A food stamp only program might be the most inexpensive to implement, but a system that integrates multiple programs might be the most cost effective in the long run. Interviews with state officials have indicated that most states are interested in these types of integration from cost and from service standpoints. This task is more difficult in stand-alone systems, but far more streamlined if an integrated approach is used.

- Defining the System's Functional and Performance Requirements. The design for an EBT system must take into account the system's functional requirements. The requirements will define how the EBT system will perform tasks necessary to accomplish five major functions:

  -- Authorization of access to benefits

  -- Provision of food benefits to recipients

  -- Granting credit to retailer and to financial institutions for benefits redeemed

  -- Reconciliation of system accounts and production of management reports

  -- Management of retailer participation

  Although it is possible at this stage for a state to opt for a customized system, our interviews with state officials have indicated that budgetary constraints and the desire to integrate with existing commercial systems will preclude any desire to establish a customized system.

  The EBT system design must include other design requirements that address system capacity, performance standards, requirements for integration with

program operations. The EBT system must have sufficient capacity to handle the expected peak load and overall activity in its pilot area, and it must have the capacity to accommodate the state's long-range plans. EBT system performance requirements that should be established include reliability, down time, response times, and ease of use. These requirements will insure that users and financial institutions will accept the new system. Finally, the system design should determine the configuration of the EBT system. This includes the plan for any necessary upgrading of the state's computer systems, and for identification of any hardware requirements, such as a telecommunications system, POS terminals, printers, debit card manufacturers, and balance inquiry devices.

- Preparing a System Design. A detailed system design must next be prepared, which describes functional, performance, and hardware requirements. The design document should also describe functional and user requirements, roles of program participants, performance standards, system configuration, and testing and implementation schedules.

- Reviewing the system design plan. Finally, a design review must be completed, either as an ongoing process or as a formal task. This review should be a comprehensive assessment of the logic and viability of the detailed design. The system design should be reviewed by any interested system user, such as operations staff, retailers, and financial institutions. System design should also be reviewed as part of an ongoing process by state personnel.

ii. System Development Activities

In its effort to develop a statewide EBT system, a state has three options. It can develop its system with in-house resources, it may contract out (a turn-key approach), or it may contract out part of the development, essentially serving as co-developer of the system. The first approach offers the state maximum autonomy in developing its system, but seems unrealistic due to the financial and personnel resources it would require. The turn-key approach would be the least expensive alternative to the state, but effective contract negotiation would be vital and state employees would still need to provide assistance in integrating the system with existing state computers. The co-development approach would allow the state to have closer oversight and

more input into system development. Tasks that must be accomplished no matter which approach the state chooses include:

- Writing and debugging system software
- Preparing equipment and communications facilities
- Testing the system
- Documenting the system design and operating procedures
- Preparing for EBT implementation

These steps are described below.

- Writing and Debugging System Software. The goal of writing and debugging EBT system software must be accurate and efficient processing of all system functions. This should be achieved through integrated testing, with repeated testing for software that proves troublesome. The degree to which this step will require resources will depend on the complexity of the system, the availability of pre-programmed software, and the extent to which existing software must be modified.

- Preparing Equipment and Communications Facilities. Another important task in insuring the proper development and testing of software is preparation of computer equipment and the communications facilities. Developers must access the type of equipment specified by the system design, and should conduct integrated testing on the actual configuration that will be used in operations. This process might also include procurement and testing of new equipment. An EBT system must have adequate telephone line access to support peak-period demand for communication with POS terminals, balance inquiry terminals, and remote workstations. The state development team should review line requirements identifies during the design stage, determine the availability of existing lines to meet these requirements, and arrange for installation of any additional lines necessary.

- Testing the System. Interim system testing is necessary to ensure that EBT software modules and equipment will function as designed. These tests should encompass all functional specification, capacity requirements, performance standards, and interfaces between the EBT system and other systems. Tests should be completed in an environment as similar as possible to the actual

working environment, with oversight and/or participation by the state to ensure the desired results and to begin to familiarize staff with the new system.

- <u>Documenting the System Design and Operating Procedures</u>. The EBT system development Project Team should devote substantial time to documenting the system design and the operating procedures. This documentation should reflect any changes in the system made during system development. Issues to be considered when developing operating procedures include skill and staffing requirements, ease of use, security, production scheduling, and impacts on existing operations and activities. Operating procedures should be developed by experts in the service delivery and EBT fields.

- <u>Preparing for EBT Implementation</u>. Preparations for the implementation of an EBT system should begin at the start of the development process. Preparations include:

  -- Determination of responsibility for implementation tasks

  -- Preparation of a system implementation schedule

  -- Preparation of training materials for retailers, recipients, and FNS staff

  -- Recruitment of retailers for system participation

  -- Establishment of agreements necessary for system operation

  -- Establishment of agreements with a clearinghouse bank, FNS and service contractors

iii. <u>Acceptance Test Activities</u>

The final stage of development prior to total implementation of an integrated EBT system is the acceptance test, which assesses the EBT system's ability to operate according to the functional performance requirements of the design, and the state and contractor's readiness to

implement the system. The state, or an objective third party, should be responsible for carrying out this critical stage.

After preparation of an Acceptance Test Plan, which documents the approach for acceptance testing of functions and performance standards, the test environment, and the test schedule, acceptance test scripts must be prepared. These scripts present in detail the steps necessary to measure the appropriate components. Both the Acceptance Test Plan and the scripts should be prepared by experts in these technological fields who are objective enough to perform fair tests.

Before the actual test can be conducted, the state and other test participants must complete several tasks to prepare for the acceptance test. All necessary equipment and software must be in place, and everyone who will participate in the test must understand their duties as defined in the script. The state may act as a liaison to a party conducting the test, or may conduct the test on its own. The personnel participating in the test should be those who will be using the system after implementation, since this will allow further opportunity for state personnel to become acquainted with the new system, and will expose some of the problems the state might encounter once the system is fully operational.

Finally, the test results must be evaluated, and each discrepancy must be noted and attended to. Test results should also be analyzed in terms of the readiness of the state and contractors to successfully implement the EBT system. Staff responsible for implementation should understand all aspects of the system relevant to their responsibilities. At this point, all training materials should be complete and all necessary agreements should be made. Depending on the outcome of the acceptance test, a second acceptance test may be necessary.

There is one system testing procedure **not** described. It is the use of an independent party to conduct Independent Validation and Verification (IV&V) of all system hardware and software. Normally this involves review of code, attempting to break the system, and other actions intended to test system integrity and conformance to specifications and standards.

iv. System Implementation Activities

Once all testing has been satisfactorily completed and all necessary agreements have been made, system implementation activities can begin. Major tasks that occur in the system start-up phase include:

- Preparations for system start-up, including pre-start-up training
- EBT system start-up activities and training of recipients
- Monitoring operations during start-up and phase-in
- Transition to steady-state operations

These task are described below.

- **Preparations for System Start-up, Including Pre-start-up Training.** Preparations for EBT system start-up includes all participant who will participate in the program, except those who will be trained after operations begin (i.e., recipients). Management must understand the system, its functions, and the implementation process. All sites for EBT operations, including data collection centers, local welfare offices, equipment service facilities, and other field sites, must be prepared for EBT operations. EBT operations staff at all sites and at centralized locations (i.e., hotline operators) must be trained.

  One of the most important aspects of this process is retailer preparation, which will require the majority of pre-start-up resources. Retailers must be equipped with POS terminals, printers, and power and telephone lines. Retailer data must also be entered into the EBT system, while the retailers themselves should receive hands-on training, and understand (and own) a detailed operations manual.

Finally, banks and other financial institutions should understand their role in start-up and should be prepared for the resulting influx of activity.

- <u>EBT system start-up activities</u>. EBT system start-up activities begin with loading the production database and recipient notification. System control files created during development must be updated, and all retailer and terminal data must be entered and verified. Using several media sources, recipients should be notified prior to start-up of the date of implementation and the changes to expect.

  Once recipient accounts have been established and benefits posted, EBT system recipients can receive training. Requirements for recipient training include:

  -- Scheduling recipients for training

  -- Issuing transaction cards

  -- Providing recipients with handbooks and necessary training materials

  -- Conducting training sessions

It may also be important for states to establish services to be used only during start-up, including a hotline or on-site facilitators, and additional staffing may be necessary during this critical stage.

- <u>Monitoring Operations During Start-up and Phase-in</u>. Monitoring operations during start-up and phase-in is an important function for EBT systems managers. The activities of all participant groups and the problems they encounter should be monitored and documented via system reports, field observation, and input from participants. One of the important aspects of the proposed engagement will be to collect this type of data, in an effort to produce a 'troubleshooting' guide for other states as they begin implementation. This will facilitate the start-up process, as well as allow states to plan for problems likely to emerge and to plan to effectively deal with them.

- <u>Transition to Steady-State Operations</u>. Once all implementation tasks have been completed and problems occurring during start-up have been resolved, the system is ready for the transition to steady-state operations. This will generally entail turning responsibility over to lower level state staff. Finally, the system

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can be evaluated for its effectiveness and the state can decide whether to expand the pilot program to the entire state. Strengths and weakness should be evaluated according to performance of administrative costs, technical performance, ease of use, security, and participant satisfaction.

v. The Decision to Use EBT

Although a few of the states we interviewed were in the System Design stage of EBT implementation and a smaller number had implemented demonstration programs, the vast majority of states were at a point where EBT was still an option (see Exhibit I-4). Indeed, as we note elsewhere, even some of the states operating small-scale demonstrations are reluctant to expand EBT in the absence of the right combination of factors. These states, since they have no functional experience with EBTs were interested in FNS technical assistance, but in the pre-System Design realm. Exhibit I-5 highlights a five step implementation approach that is more appropriate when the needs of states are considered. States in the Pre-System Design stage (Decision to use EBT), have expressed needs for FNS technical assistance in the following areas:

- Cost benefit analysis
- Assistance with legislature
- Assistance with Advanced Planning Documents
- Research on demonstration programs in other states
- Approaches to implementation
- Deciding what type of service to deliver statewide
- Linking private sector development of POS with government goals

Each of these areas are described in the section The Primary EBT Players.

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Five Stage Implementation Process

Decision to Use EBT

- Cost/benefit analysis
- Assistance with legislature
- Assistance with Advanced Planning Documents
- Research on demonstration programs
- Approach to integration
- Decision on type of statewide delivery system
- Linking private sector development of POS with EBT

System Design

- Assemble EBT Project Team
- Specify general features of design
- Define system's functional requirements
- Detailed system design
- Design review

System Development

- Write and debug system software
- Prepare equipment
- Prepare communications facilities
- Test the system
- Document system design and operating procedures
- Prepare for EBT implementation

System Testing

- Prepare acceptance test plan
- Prepare acceptance test script
- Prepare acceptance test
- Conduct acceptance test
- Evaluate test results

Implementation

- Training of FNS personnel
- Retailer preparation
- EBT system start-up
- Training of recipients
- Monitoring start-up and phase-in operations
- Transition to steady-state operations

e. Alternative Forms of Food Stamp Benefit Delivery

The food assistance component of FSP services (other services include work registration, E&T, nominal counseling on food purchasing, availability of referral to other programs for income assistance or subsidized health care) can be delivered to those individuals and households certified as eligible in a number of ways. The program now uses "cash-like" scrip which we now refer to as food stamps. The key feature of the food stamp was that it could only be used to purchase food from a merchant authorized by FNS to accept food stamps. This was a critical feature since it more or less assured that the beneficiary would use each month's allotment of food stamps to purchase food rather than other consumable non-food items or to pay for housing, utilities, transportation, or clothing. Unlike cash, it requires considerable post-sale processing so that the merchant is credited with funds and the FNS account at the U. S. Treasury is charged for the cost food stamp redemptions.

Over time, the way that food stamps are issued has evolved from regular visits by an authorized member of the participating household to a local welfare office to a broad range of mechanisms. These mechanisms are intended to cope with at least two conditions. The first is the need to distribute monthly food stamp allotments efficiently with large numbers of persons each month. The second is to distribute a negotiable commodity that is highly vulnerable to trafficking and theft.

Currently, the vast majority of individuals and households are issued food stamps in one of five ways:

- Direct Mail -- Coupons are mailed directly to recipients each month. This method is vulnerable to mail theft and delays associated with address changes. Approximately 31 percent of all issuances are done in this way.

- Direct Delivery -- Coupons are sent in bulk to an issuance agent and the recipients are issued food stamps if they have a current FSP identification card and sign an Authorization to Participate (ATP). Issuance agents may include banks, post offices, or check cashing facilities where there is appropriate physical security. This method is used in New York City where there are large numbers of recipients and where there is a high risk of theft.

- Household Issuance -- Coupons are distributed to recipients upon appearance at the local welfare office (or other authorized facility), where they present their identification cards and sign a household issuance record. This is a manual system. This is a manual system.

- On-line -- This is essentially the same as the household issuance system *except* that current certification is verified against a current allotment file contained in a data system. The distribution is also recorded in the data system.

- ATP System -- Authorization to participate cards are mailed to recipients each month. The recipient then presents the ATP at an authorized issuance office and receives a monthly allotment. Approximately 43 percent of all benefits are issued using an ATP to establish current certification status and the value of the monthly allotment.

The ATP may be used in combination with one or more of the other issuance methods noted above. In all but direct mail, the recipient must appear at the issuing agency, whether it be a welfare office, bank or post office, or check cashing facility.

A sixth method, cash, is used in Puerto Rico. Much of the food purchasing in Puerto Rico is done using informal -- roadside -- vendors who are unbanked and therefore unable to redeem food stamps through the established bank-Federal Reserve system. Thus, the only way the program can work without totally disrupting the food distribution and sales system is on a cash basis.

It is this cumbersome, burdensome, vulnerable, and out-dated issuance system that EBT is intended to replace along with the outmoded redemption system that is now used. However,

there are other potential issuance systems now being examined by FNS or being considered as the Federal government seeks to reduce administrative costs and reduce or offset operating and program costs. Predominant among them is conversion to a direct cash payment. Direct cash payment or "cashing-out" is viewed as desirable primarily because it eliminates the complexities of issuance, in-store use (transaction), merchant redemption, and subsequent processing in the banking and Federal reserve system. It has been suggested that cash-out would permit greater discretion in food purchasing and would eliminate the stigma on program participation. It is also argued that the program would be less prone to fraud and abuse by merchants, recipients, and other players in the FSP benefit delivery system.

While the program would be greatly streamlined, its fundamental objective of providing the means for obtaining minimally acceptable nutritional intake would be significantly eroded. The recipient would be able to use the cash without restriction either to cover the cost of other necessities or to purchase non-essential items. Also there is anecdotal evidence to suggest that the coupon forces a form of household budgeting at least with respect to food. Cash-out, if it involves banks, would require first of the month depositing with the result that the Treasury would not be able to accrue the benefits of float associated with a pay as transactions accumulate approach.

The various cash-out demonstrations will provide the evidence needed to better inform this fundamental policy issue. In the event that the Congress elects to change to cash-out, then issuance and redemption will be greatly simplified. Most of the administrative middle men would be eliminated or their roles substantially changed. The effect on the proposed effort would be focus on the development of an appropriate distribution system capable of meeting the needs of a largely unbanked recipient population. Thus, we would still be confronted with the need to provide a mechanism for distributing funds to recipients.

Given the current EBT developments in AFDC and the direct Federal benefit payment systems, it is reasonable to anticipate the need for a system for distributing a debit card to recipients and a system for updating accounts and controlling the distribution of monthly allotments. Initially such a system might work using ATM networks and as it becomes more wide spread, the POS networks. As the number of POS machines expand especially in food stores, then it may be appropriate to again consider tying access to the FSP cash account only in connection with a transaction originating from a food store. While it might still be possible to obtain cash, the fact that the transaction would take place in a food store increases the likelihood of use of food stamp cash for food purchases. This assumes that FSP would be treated as a separate account and not simply folded into AFDC for public assistance cases. The alternative strategy of mailing monthly checks carries with it the high risk of theft, and abuses associated with check cashing fees. It is inevitable that cash-out would require some mix of EBT and check mail-out again because of the high percentage of unbanked food stamp recipients and the fact the an ATM or POS-based access method is only possible where there is reasonable access to terminals. There will always be cases where the only way benefits can be distributed to them will be in the form of a check sent by mail. As an alternative, FNS and the states may consider setting up accounts for each recipient in a recipient-designated bank. However, this approach raises potentially significant concerns in the banking community about bank liability for transactions it is not responsible for, and the administrative cost to banks.

Finally, the notion of on-line and off-line transactions as an alternative issuance method is more appropriately considered as a subset of the EBT process and its internal controls. An off-line "smart card" system introduces a set of self-contained controls over access to the appropriate amount of benefits (also see concept paper 2).

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f. The Primary EBT Players

In this section we present the results of the significant informal background research that was performed by the **Price Waterhouse Team** in support of this solicitation. The nature of this RFP requires that the successful offeror has the ability to provide comprehensive high quality consulting services, for one or multiple tasks at once, in a quick turn-around environment. The **Price Waterhouse Team** recognized that in order to properly perform a contract predicated on providing assistance to FNS and the states, it is incumbent on the contractor to have knowledge of where the states now stand along the path toward statewide EBT implementation. In response to this, the team conducted an informal survey of state food stamp agencies in the 48 contiguous states. In addition, the **Price Waterhouse Team** completed informal interviews with members of the food retailing, banking, and shared network communities. We obtained data from FNS on county-level food stamp authorized merchants in selected states. The results of these efforts are presented in this section as follows:

- Brief Description of the key players in EBT
- Results of State Canvassing Effort
- Achieving Critical Mass in a State: A Conceptual Model
- Special focus on three states: California, New Mexico, and Georgia

i. Brief Description of the Key Players in EBT

The key players in the EBT area include:

- U.S. Department of the Treasury: Financial Management Service (FMS). The Treasury's Financial Management Service is the central U.S. Government contact point for the inter-departmental development and promulgation of EBT technology. FMS is a clear and visible proponent of EFT/EBT in all possible Federal and state government applications. FMS has established the goal of ensuring that benefits are delivered in the most cost-effective manner possible while best meeting the needs of the providers and recipients of assistance. The FMS-dedicated EBT Project Team coordinates an formal Federal program to

examine, in a structured fashion, EBT technology and its application. FMS has researched and reported extensively on EBT in an effort to promote Federal, state, and general public awareness of its benefits and the collective action necessary, on the part of the key players, to achieve greater EBT implementation.

- USDA Food and Nutrition Service (FNS). The Food and Nutrition Service is considered a pioneer in the testing of EBT technology through its substantial research and demonstration efforts.[2] EBT demonstration projects sponsored by FNS span the range of benefit programs; from food stamps only, to WIC only, to integration with other state and Federally administered benefit programs. As a subset of EBT, FNS research and demonstration projects compare on-line and off-line (Smart Card) technologies. In addition to demonstration programs aimed at the EBT delivery of food stamps through POS machines at food retail establishments, FNS has sponsored research and demonstration programs for the cash-out of food stamp benefits. While our state survey indicates that few states currently consider cash-out a desirable option, evaluation of FNS cash-out demonstrations will provide valuable new information for key state decision makers.

- Shared Networks. Our interviews with ATM and POS providers have indicated that this section of the financial industry is growing rapidly, and POS technology is presently at a position to increase availability tremendously. We have interviewed regional providers such as MAC and MOST, as well as state providers such as PRESTO. These sessions have elicited numerous observations about the future of ATM, POS, and EBT technology. Key findings include:

  -- The cost of ATM/POS equipment is falling rapidly, and networks are becoming more advanced. As POS technology begins to become more popular, and ATM networks become more widespread and popular (ATM transactions already outstrip total Visa and Mastercard transactions), the race to develop less expensive and more efficient equipment will become even more intense. The consolidation of the EFT market will help to standardize equipment and will allow for greater research and development efforts.

  -- The private sector is planning for EBT to integrate with its POS and ATM networks. Most networks are either currently upgrading their systems to

[2] This section is drawn from documents and reports. We have not contacted any FNS staff except to obtain publicly available date.

accept government assistance programs or a planning to. It is important to note that most commercial networks do no believe the government will use a 'stand-alone' system.

-- Financial considerations drive private sector development of POS at grocery retailers. Presently the technology exists to establish POS networks, but the expense is often prohibitively high. One area of California, for example, is operating a POS system due to the fact that large financial institutions offered to subsidize much of the POS technology needed by the grocery retailers. On the East coast, however, many grocers spent considerable capital on upgrading systems to accept electronic scanning devices in the early 1980s. These devices have not fully depreciated, and many retailers do not have the capital for upgrades of their cash register systems. However, merchants are beginning to accept the idea of stand-aside systems (POS terminals that are not connected to the cash register).

-- Until government regulations are better defined, many networks will not use POS. Government regulations will define the allowable locations for EBT/POS (in terms of which grocery sites can receive EBT, and how many POS machines will be necessary in any store), any tax incentives for POS development, other methods and degrees of subsidization, and the number and types of programs that will be integrated into the existing system.

- Retail Food Industry. In general, the retail food industry strongly supports the government's EFT/EBT initiatives. Food merchants recognize the many potential benefits of no longer having to handle the paper food stamps: processing overhead is reduced; less of a need to keep large amounts of cash-on-hand as benefit recipients smooth out their purchasing habits; potentially increased customer traffic and customer loyalty. EFT/ATM/POS technology developments are bringing debit terminals to more and more stores as a form of achieving competitive advantage. As the needs of the banked consumer population drive the development of the POS infrastructure, food retailers' chief concerns are not with EBT as a concept, but rather with specific application issues it engenders.

  One of the greatest concerns of food retailers regarding EBT is over the cost of placing POS machines for EBT use. Current FMS policy on future EBT demonstrations is that only existing POS locations will be used, thus removing the government from the practice of purchasing expensive POS terminals. Another key retailer concern is how EBT transactions could alter front-end costs and

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productivity. Retailers are hesitant to embrace EBT without some reassurance that POS/ATM modifications needed would be shared costs, and that transaction times and system down-time would not inhibit normal operations. In short, food retailers at various stages of acceptance of EBT. Most plan to continue with their own POS developments, monitor the evaluation of EBT demonstrations, and work with states as needed to further the application of the technology to government benefit programs.

ii. Results of the State Canvassing Effort

The primary objective of the **Price Waterhouse Team's** informal survey of forty-eight state agencies was to gain an understanding of where each state currently stands with regard to EBT and the Food Stamp Program.[3] By necessity, however, the scope of the survey extended beyond food stamps to encompass other assistance programs. In this manner, the **Price Waterhouse Team** accumulated, in a very short period, a substantial amount of information on current forms of benefits and delivery systems in use across the nation. Finally, the survey sought to identify key issues that states have confronted and are confronting, particularly with regard to implementing EBT in the Food Stamp Program.

As noted earlier, we have expanded the Abt Associates' four-stage EBT implementation process to include a fifth critical stage: *Decision to Use EBT*. As a result of our survey, we were able to classify each state according to where they currently stand in the EBT implementation process. It is important to note here that the process does not refer solely to statewide implementation. If a state has/is conducting an EBT demonstration project as a pilot or larger, it is considered at a point beyond the initial decision to use EBT. We recognize that some demonstration states may proceed, while others adopt a more cautious wait-and-see position. Exhibit I-6 illustrates the results of the survey in terms of level of EBT development.

[3] Note: The **Price Waterhouse Team** was very careful to inform the states that this effort was initiated by Price Waterhouse and was in no manner related to the ongoing FNS effort to update state program operations profiles.

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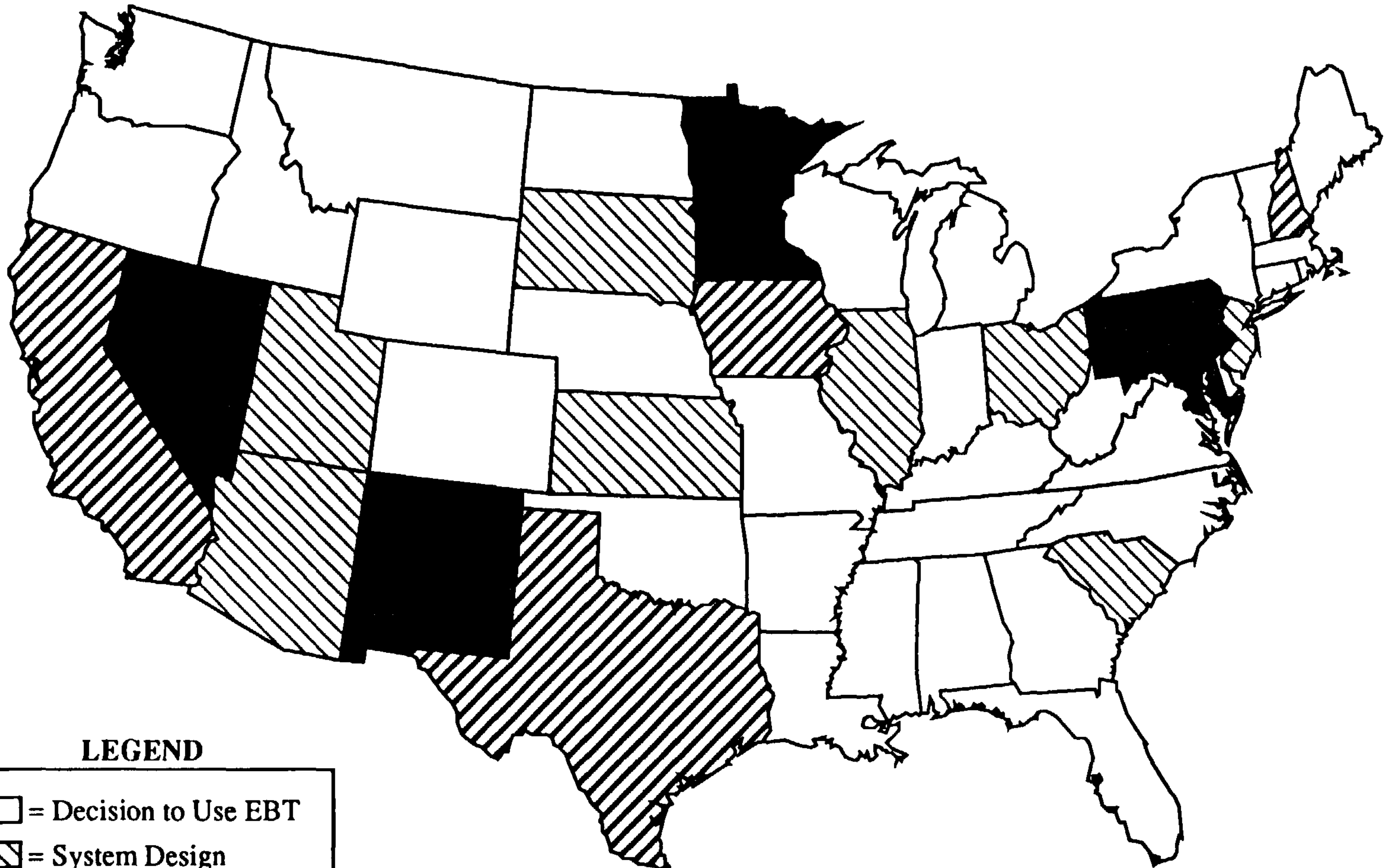
Current Level of EBT Development
Survey of State Agencies



LEGEND

- = Decision to Use EBT
- = System Design
- = System Development
- = System Testing
- = Implementation

Source: Survey of State Agencies, PW 8/91

Exhibit I-6

Interestingly, thirty-one states describe themselves as in the earliest stage of EBT implementation; eight states are currently in the system design stage; four states are developing systems; and, five states have fully implemented demonstration EBT systems for food stamps.

The results of the state canvassing effort confirmed our suspicions that most states are in the earliest stage of EBT development. While that comes as no great surprise; the survey did reveal a broad range of issues embedded in this first critical stage. The survey indicated that states are at different points in their decision-making process: some are conducting initial research informally with no future plans; others have formed task forces to study EBT; still others have commissioned independent studies, aligned critical players, and are poised to move forward. Further, a host of important issues and considerations accompany the states as they traverse this first phase. These considerations reflect not only the risks each perceives but also the type and degree of assistance each seeks as they move ahead. Knowledge of the gamut of needs at the state level, as gained through this survey, will enable the **Price Waterhouse Team** to provide pertinent customer-driven assistance to the states through this contract.

Key findings of the survey of state agencies, particularly facing states in the first stage of EBT development are as follows:

- States Need Reliable Cost-Benefit Analyses. Many states contacted that are currently studying the possibility of EBT for their food stamp programs are concerned about the potential cost of the conversion from paper to plastic. Having reviewed the reports of previous demonstration projects, these states are concerned that they develop objective and reliable cost estimates from the outset. Cost-benefit and cost validation studies in support of Advanced Planning Document (APD) preparation were viewed as essential needs of the states. State program managers communicated the need for assistance in comparing cost projections with levels and quality of service. As many states will be looking to gain approval for EBT through their legislatures, reliable cost-benefit analyses will be in increasing demand.

- <u>Many States Waiting on Retailer/Banking Industry Developments</u>. Many states identified reluctance on the part of retailers and the banking community to assume the cost of POS terminals. Still, the same states feel that one key aspect of making EBT affordable (i.e., maintaining cost-neutrality) will be to co-opt existing and future POS devices and ATM shared networks. Most states in the initial phases of EBT development are concerned over exploring options in POS deployment, and bringing the retailers into the process. In several instances states noted that this intersection between the public and private sectors obscures any clear role for government, making dialogue all the more vital. As one state noted, "if the private sector hasn't found it cost-effective to put POS in every grocery store, I'm not convinced it's right for government".

  States note that budget pressures and limited Federal cost sharing are putting EBT "on hold" pending further proliferation of the technology by the private sector. Finally, a compelling argument for waiting, advanced by many states, is that public sector procurement of POS and related hardware risks becoming outdated and obsolete. The private sector, however, views ATM and POS technology as a developing competitive tool, and would have the incentive to keep its equipment current.

- <u>Reaching Rural Areas: States have Mixed Feelings Over Mixed Systems</u>. Several states noted that the greatest obstacle they face in developing a statewide system is dealing with rural areas. Some states appear to welcome the idea of a mixed delivery system as a solution to reaching rural areas, while others are strongly opposed to such a system. Those opposed to mixed delivery note that the bulk of their costs are now in paper issuance, and maintaining that process if even for a small caseload would be cost-prohibitive. Those in favor generally feel that savings through EBT in urban areas coupled with a relatively small rural recipient population make a mixed system viable.

- <u>Most States Favor Staged over Statewide Implementation</u>. A clear implication of the last issue is that states are divided over the appropriate timing and scope of implementation. The majority of states interviewed were cautious regarding implementation of EBT statewide. These states largely indicated a need to conduct small scale pilot projects in their most central, heavily populated, urban counties before expanding the system. This feeling is fueled by the general lack of coordinated thinking and formal planning for EBT at the state level. Most states interviewed in the infantile stage of EBT development have yet to create a task force or other inter-departmental team to study the issue. These states are content to provide assistance to interested counties on an as-needed basis, and thus further the staged development of EBT.

Those states that expressed the intention to go statewide from the outset with food stamp EBT noted that this would be possible because food stamps would be the last assistance program to go to EBT. These states feel that ATM development has progressed sufficiently to allow EBT of AFDC, General Assistance, and SSI but POS proliferation is lacking. By implementing EBT for other programs first, POS will have time to develop and the necessary public sector share of developing the needed POS infrastructure will be lessened over time. These states equally realized the necessity of having a hand in POS as it develops, for fear of incompatibilities with system standards in the longer run.

- **Integration of Food Stamps with Other Programs Seen Crucial to EBT Success**. Nearly every state interviewed that has given even preliminary thought to Food Stamp EBT acknowledge the critical need to integrate the EBT delivery of all benefits at the state level. These states argue that only through such integration can the needed scale economies be achieved to make food stamp EBT a cost-viable alternative to paper issuance. Where states differ on this issue is about the appropriate order for integration. Some states, particularly well endowed with POS infrastructure, see food stamps leading other programs. Most others, however, see the complexity of food stamp EBT relegating it to final status, behind AFDC, GA, SSI, Medicaid, and WIC. Several states viewed WIC implementation as a logical precursor to food stamps EBT.

- **Cash-Out of Food Stamps Generally Not Foreseeable**. The vast majority of states interviewed as part of the survey indicated that they currently do not cash-out any portion of their food stamp caseload, and have no plans to do so in the future. Although many states have thought about the issue, and some have studied formally, the overwhelming feeling communicated was that cash-out is neither politically viable at home nor perceived to be looked favorably upon by the USDA. Minnesota was one of few exceptions to this; food stamps are likely to be cashed-out with all assistance programs over the long-run.

- **States Need Assistance with Legislature**. In states that have still not decided to use EBT, many food stamp directors have indicated that a productive means for introducing the concept to state legislature has not been determined. These states would like to know not only the costs and benefits of the system, but a more formal presentation of EBT philosophy, policy, feasibility, demonstrations in other states, and long term effectiveness. States with difficulty presenting the topic to legislature would also need descriptions of the presentation of the topic to other state legislatures.

- <u>States Need Assistance with Advanced Planning Documents</u>. With increasing regulations for EBT system implementation and upgrade, states that are considering an EBT system must submit Advanced Planning Documents for implementation and each stage of upgrade. Many states have expressed a desire for technical assistance from FNS or a contractor to prepare and submit these documents for all stages of EBT system evolution.

- <u>States Need More Information Research on Demonstration Programs in Other States</u>. Part of the process of determining the feasibility of EBT for many states is understanding how well EBT has worked in other states. Thus, many states have expressed a desire to receive information on EBT, either in written form or in a presentation by a state official from a state with a system in place. This information will help states make an informed decision, especially when considering the many different scenarios of population density and per capita income throughout the nation. With documentation of existing EBT programs, state officials will be able to determine what types of states have the most positive experiences with EBT and whether or not EBT would be likely to be successful in their state.

To summarize, <u>very</u> few states are currently positioned to go statewide with EBT implementation. Facing budget crises, and doubts over costs and feasibility, most states have adopted a cautions "wait-and-see" approach to EBT. States which are seriously studying EBT and have participated in Federally funded state exchange programs have found this experience particularly useful. While some states in the design and developmental stages of EBT implementation cite the need for systems-oriented technical assistance, most states voice a need for objective cost-benefit and project feasibility studies, as well as assistance in preparing Advanced Planning Documents. As the thinking on EBT proceeds, many states will face major decisions on the scope and timing of implementation as well as integration among benefit programs.

The following presents some further highlights of selected states of the **Price Waterhouse Team's** survey of state agencies:

- <u>New York and Michigan</u>. New York and Michigan are unique compared to other states in their current method for issuing food stamps. New York operates with the Alternative Food Stamps Issuance (AFSI) program under which retailers issue paper food stamps to eligible recipients based on an electronic authorization program. Outside of New York City, the issuance is handled at the grocer's service desk, using POS equipment, a "mag card", and a PIN as well as on-line verification against a central data base. New York was required to obtain a waiver to issue food stamps in grocery stores. Within the City of New York, identification cards are used instead and many retailers such as check cashing establishments distribute food stamps.

  The Michigan issuance system is a similar on-line system in which ATP forms are replaced by plastic mag cards for obtaining food stamp benefits from authorized centers. Grocery stores do not issue food stamps, but rather local offices (15%) and contracted vendors (85%) like check cashing agents distribute the benefits. Michigan currently has brought on-line issuance to 95% of its caseload; has cut duplicate participation to nearly zero; and enjoys issuance costs in the range of only $0.85 - $1.10 per transaction.

  EBT has been considered extensively in both states, and both states are considered excellent candidates for EBT. The on-line issuance system, especially in New York's grocery stores, makes these states well positioned to transfer to full EBT. With cost a major issue, New York's plans are to wait until the private sector puts POS into the major retail stores. At that point, the state foresees full-scale EBT implementation without any pilots. These large chain stores are currently on-line for issuance in all of the state's fifty-seven counties. Michigan plans to take a different course, favoring a small scale pilot in a county where there are currently no vendor agreements and few retail food establishments requiring POS equipment.

- <u>Maryland</u>. The State of Maryland is currently in the final stages of becoming the first state to implement a statewide EBT system. This expansion follows an initial integrated EBT demonstration that covered food stamps, AFDC, Child Support Enforcement, and General Assistance. The demonstration, in a district within Baltimore, serves 6,000 food stamp recipients or 3 percent of the statewide caseload. Under the program, recipients get an Electronic Benefits Card which

is used at the grocer's to obtain food against a state food stamp account. Participating food retailers also serve as bankers of sorts, allowing AFDC recipients to obtain cash with their cards much like cashing a paycheck at the grocery store.

A critical aspect of the Baltimore project is that the costly POS infrastructure was procured by the state through a vendor. The vendor, TransFirst, found continued operation of the system unprofitable due to several factors, and has since transferred the contract to Deluxe Data Systems following an injunction by the state. Critics of the Maryland program cite the lengthy delay in gaining Federal approval to expand statewide as limiting the ability of the state to pay the vendor. With a large capital expense spread over a relatively small recipient base, the system soon became unprofitable to TransFirst. State projections currently forecast diminished and therefore acceptable transaction costs only when the system is finally on-line statewide. Maryland serves as an example of some of the difficult issues facing states as the approach EBT. With no significant debit card base in Maryland, the state is essentially driving the technology it will use. Yet without this base on which to build, Maryland was left to assume greater risk than other states now appear willing to assume.

- South Carolina. South Carolina, like only seven other states, is currently in the System Design stage of EBT implementation. With the decision to develop EBT made, the state is obtaining Federal clearance to request proposals for the EBT system. The state's decision to procure the EBT system externally stems from concerns about the capacity of their current system to handle EBT. Plans currently call for the EBT system to be in place by 1992, with the total elimination of food stamps within three years.

  South Carolina is highlighted because of its plans to integrate the EBT system across benefit programs to include AFDC and Child Support at the outset, and later add SSI. The state recently added WIC to its early integration plans, with the submission of an APD for Federal approval. Costs are a main concern of the state as EBT implementation nears. Specific concerns over meeting Federal government requirements and business specifications fuel fears of high program costs. In an effort to assuage these, the state will attempt to work into the existing ATM/POS infrastructure as much as possible. In short, South Carolina faces many of the issues germane to states working toward EBT implementation. They credit the extensive assistance they have received from FNS as well as lessons learned from other states as important to the eventual success of the program.

iii. Achieving Critical Mass in a State: A Conceptual Model

As indicated through our state canvassing effort, many states are supportive and interested in furthering EBT implementation, but face a host of issues defining their course. Some issues and problems receive greater weight on one state than in another. In essence, while many states are converging on the same point, they are approaching it from various directions. Recognizing this, the **Price Waterhouse Team** felt that a conceptual model would be useful in depicting the range of factors influencing the state decision to proceed with EBT. We present a conceptual economic model below, founded on a recurring theme from our state interviews: states feel that a "critical mass," in terms of number of recipients, must be achieved if EBT is to ever be cost-effective.

The notion of achieving a "critical mass" can be demonstrated by a marginal cost analysis. Exhibit I-7 shows the total, average and marginal costs for a paper (coupon) and an EBT system. Where the total cost (TC) curve begins represents the start-up cost of either system. Since a coupon system already exists (i.e., there is no start up cost), the total cost curve begins at marginal cost. Thus, start-up cost is significantly higher under an EBT system than under a paper system. The marginal cost (MC) curve shows the extra cost that the system would incur if one extra person were added. For both systems, these curves are flat, since marginal costs essentially only reflect the cost of printing new coupons or entering some information into a database. The important observation here is that the marginal cost of an EBT system is lower than for the paper system.

The combination of marginal cost and start-up cost leads to the average cost (AC) curve, or the **cost of the system per person**. Because there is no start-up cost for the existing paper system, average cost is the same as marginal cost. Since marginal cost is lower for EBT than for paper but total cost begins higher (i.e., start-up cost is high), the average cost of EBT falls

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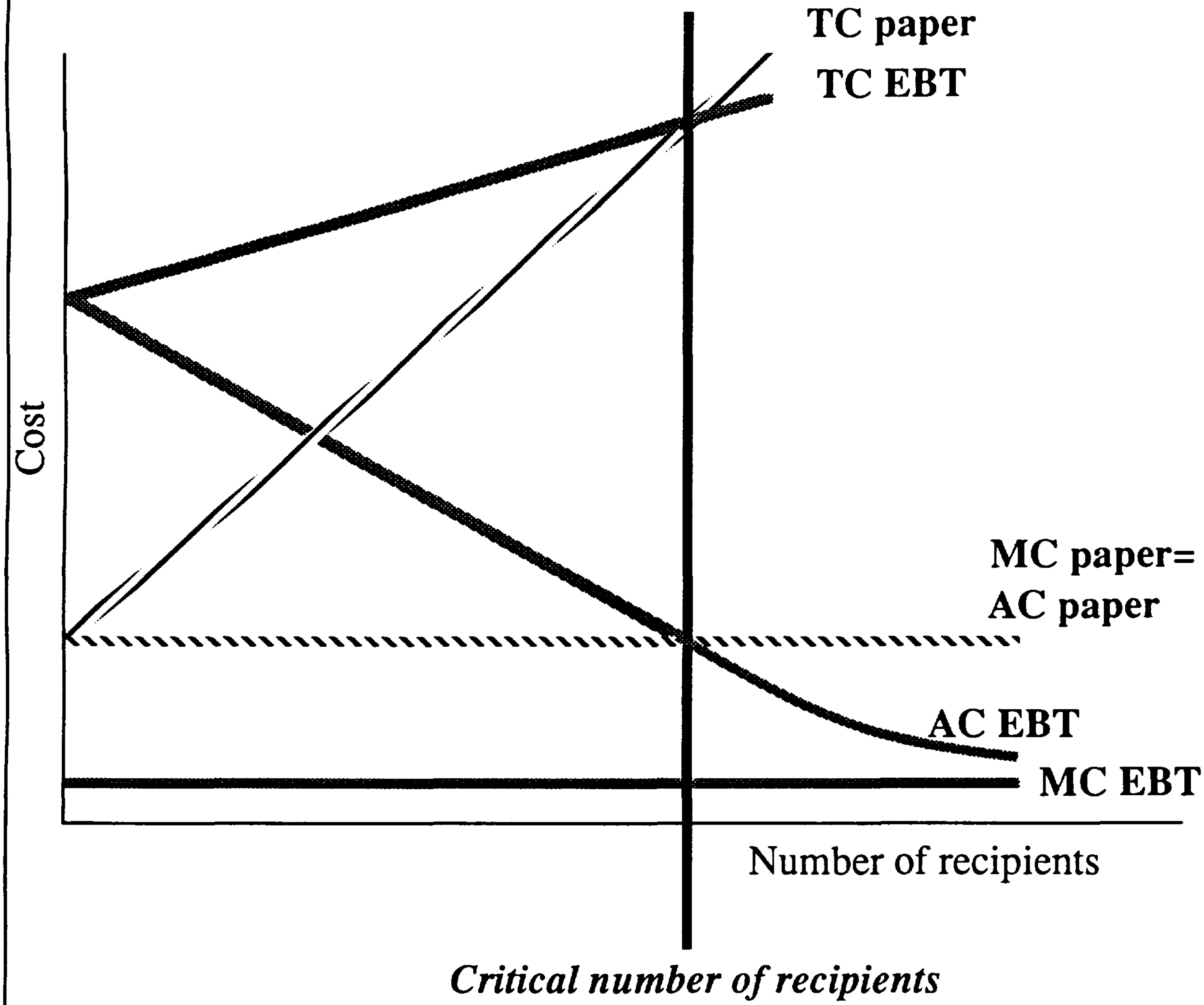
Achieving Critical Mass in EBT Implementation



TC = Total cost
AC = Average cost
MC = Marginal cost
Paper = Coupon distribution system
EBT = Electronic Benefits Distribution system

quickly and eventually becomes less than (i.e., the curves cross) the average (and marginal) cost of a paper system. At the point where the curves cross, an EBT system is less expensive than a paper system. This is what the states refer to as a "critical mass" for EBT feasibility. With this number or any larger number of recipients, an EBT system is more cost effective than a paper system.

Many factors influence the position of the cost curves in the model. For instance, the starting point for the Total Cost of EBT curve is greatly dependent on the degree to which the state can co-opt an existing ATM/POS network for its EBT delivery infrastructure. With total use of existing POS terminals, the total cost curve theoretically begins much lower on the axis. Another concept that can be illustrated is the state interest in only implementing EBT if its is integrated with the delivery of other benefits. In this simple case, the integration of multiple benefit programs moves the state out along the "recipients" axis. Thus, the more programs integrated, the sooner a critical mass can be achieved. A final application of the model is to the issue of a mixed versus full EBT system. Consider the model as it would reflect costs for a particularly urban area with a high concentration of ATM/POS machines. For such an area, the total cost curve begins at a substantially lower point, thus shifting the intersection of average cost curves in and to the left. The critical mass for making EBT feasible in that area is much less than for statewide. For a particularly rural area, however, substantial investment required for POS infrastructure raises the EBT total cost curve, thus illustrating the notion that continued paper issuance may be most effective for such areas with few benefit recipients.

iv. Focus on California, New Mexico, and Missouri

In addition to the 48 state survey, the **Price Waterhouse Team** selected several states for an in-depth analysis of current conditions that would influence the implementation of EBT statewide. The states were selected primarily according to their current stage of EBT

implementation, and also based on information gained in the informal survey. The principal objective of this focused analysis was to examine, at the county level, the relative distributions of food stamp recipients, FSP approved retail food merchants, and the current ATM shared network infrastructure. Analysis of this data enabled the **Price Waterhouse Team** to develop a first-cut approximate measure for determining which counties in each state might best be positioned to implement EBT systems for food stamps.[4] Data collection performed and development of the measures is discussed below.

Missouri is currently at the point of making the decision to implement EBT. The state is studying the feasibility of an EBT pilot, with the aim of eventually going statewide. The state treasury department in Missouri is a strong advocate of EBT as a cost-effective solution for benefits delivery through multiple programs. Current perceptions are that food stamp EBT in Missouri will only be cost-neutral if integrated with other benefit programs. Missouri is representative of many states currently in the first phase; and like them it faces the issues of timing and co-opting developing POS and ATM infrastructure to make EBT a viable alternative delivery mechanism.

California was chosen for reasons including its current position in the system development stage of EBT implementation. Other reasons, including the shear size and diversity of the state; size of food stamp population; and the proliferation of ATM/POS infrastructure make California a necessary choice for further review. Currently, the state is home to a food stamp cash-out demonstration in San Diego County as well as plans for a food stamp EBT demonstration in San Bernadino County. The San Bernadino demo would serve approximately

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[4] The measures developed for this analysis are meant to serve as a potential starting-point for further analysis of county EBT potential. Actual county-level data on POS infrastructure is not kept by shared networks, thus ATMs serve as a proxy. External factors such as budgetary constraints, political issues, and other program recipient distributions must also be considered in any large-scale analysis based on the measures developed by the **Price Waterhouse Team**.

6.2 percent of the state's food stamp caseload and would be an on-line system integrated with the disbursement of AFDC benefits.

New Mexico was chosen for its position as having implemented EBT at the demonstration level, and forward looking view of enlarging the system statewide. New Mexico is particularly faced with the issue of rurality, and the system design choices this fosters. The state is considering expansion first to the counties surrounding Albuquerque, and then potentially a mixed benefit delivery system (EBT/Mail) to reach the more distant parts of the state and the indian reservations. New Mexico notes problems at the county welfare office level in adjusting to issuance and distribution changes, as well as system interface problems which have hampered proper reporting and eluded programmers. These last system problems prohibit on-time reporting on benefit issuance from the bank to the state; limiting state monitoring of bank adherence to strict time distribution regulations.

Data was obtained from the Food and Nutrition Service on the current number of individual and household food stamp recipients by county for 1990. As a special processing request run on its mainframe, FNS was also able to provide the **Price Waterhouse Team** with county-level counts of Food Stamp Program approved retail food merchants, by type of merchant. This information was aggregated at the state and county levels, respectively.

The **Price Waterhouse Team** originally wanted to examine the distribution of POS machines by county for the selected states, but discovered that this information was not available in aggregate form.[5] The best available information on ATM distributions by county was

[5] Initial contact points for data on POS and ATM distributions included the U.S. Treasury Department's Financial Management Services (FMS) EBT Unit; the Electronic Funds Transfer Association (EFTA); the American Bankers Association (ABA); and the Bank Network News and POS News organizations. None of these organizations could provide county-level statistics on ATM and POS infrastructure, thus the inquiry was taken directly to the appropriate shared network systems: BankMate (MO), BankMate (NM), Star (CA), and Interlink (CA).

through shared network directories listing ATM locations by city. From these, the **Price Waterhouse Team** compiled county-level totals of ATMs for each focus state.

Rather than simply overlay ATM distributions on food stamp recipient distributions on retail food merchant distributions, the **Price Waterhouse Team** developed several revealing measures. The first measure is: ***Supermarkets as a Percentage of all Retail Food Merchants in the County***. Supermarkets are the most likely location for future POS terminals, thus counties with relatively high percentages of supermarkets have the best potential for supporting co-opted EBT systems. The second measure is: ***Number of Food Stamp Households per ATM in the County***. This measure combines indicators of recipient distribution and ATM distribution at the county level. The logic behind it is that counties with lower ratios of recipient households to ATMs will generally be better positioned to implement food stamp EBT than those counties with higher ratios. Simply stated, with more ATMs per household, each household has a better probability "linking" into the system. In this context, ATMs are a suitable proxy for POS debit terminals because the proliferation of the two at the state level appears highly correlated. The charts that follow illustrate the results of the application of these measures to the data collected for the focus states.

Exhibit I-8 presents a county-level analysis of EBT implementation potential for the State of New Mexico. In eleven counties, supermarkets account for more than 15% of all retail food establishments approved for food stamps. In three of these counties, Los Alamos, Santa Fe, and Bernalillo, we <u>also</u> found fewer than 100 food stamp households per ATM. By the logic outlined above, this very preliminary analysis suggests that these three counties are best suited for EBT implementation in New Mexico. Of course, this implementation has already occurred in Bernalillo county, in the form of an FNS approved demonstration project. The two other counties, however, are exactly those identified during the state agency interview as potential sites for EBT system expansion.

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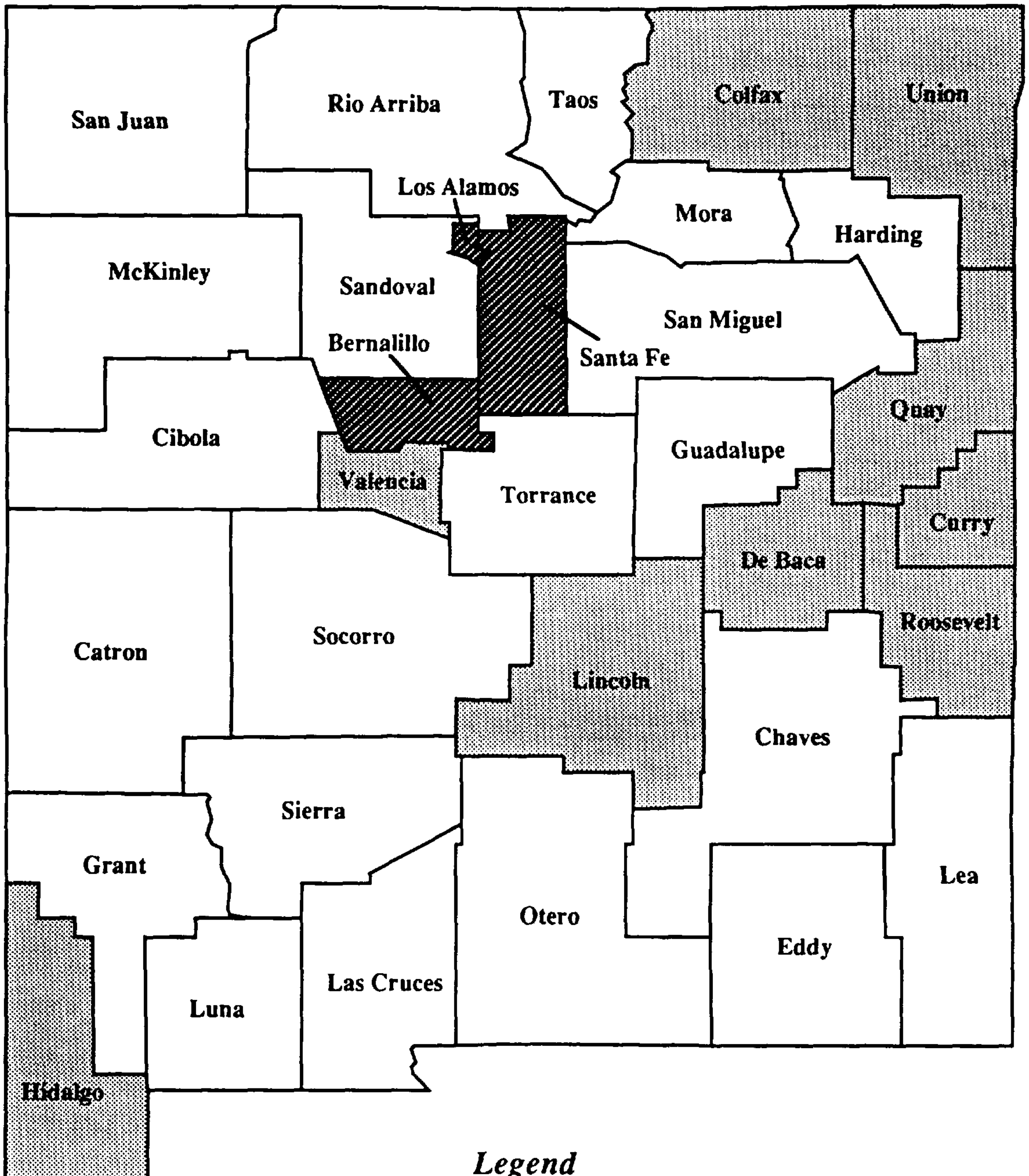
Focus On: New Mexico
County-Level EBT Potential



Legend

= Supermarkets ≥ 15% of all food retailers in county

= As above and ≤ 100 food stamp households per ATM in county

Those counties for which neither measure was applicable fall below what appear to be general threshold values for New Mexico.[6] These counties have reactively fewer potential supermarket sites for EBT transactions, as well as less ATMs and most likely fewer food stamp recipient household. It is likely these counties will be the last to develop the capacity for EBT systems, and thus would be among the first to be considered for mail issuance, if a mixed delivery system is being contemplated.

Exhibit I-9 presents the results of our county-level analysis of EBT potential for the state of California. Unlike New Mexico which has fully implemented an EBT demonstration project, California is currently in the system development phase. Our informal discussions with the state agency indicated interest in monitoring the development of the forthcoming San Bernadino County EBT demonstration, before proceeding on a statewide level. Analysis of the measures of EBT potential for the state suggests that many of the state's more populated counties enjoy are strongly positioned to implement EBT.

The dark striped shading on the accompanying exhibit illustrates a proliferation of ATMs as well as a strong supermarket content as a total of all county food retailers. Interestingly, Los Angeles County has more ATMs alone (25% of the state total) than all of Missouri; and yet LA County did not make the critical threshold of <= 100 ATMs per food stamp household. The large concentration of the state's food stamp recipient population in the county (32.9% of state total) kept this indicator inflated.[7] As a final note, our analysis appears to fully support some

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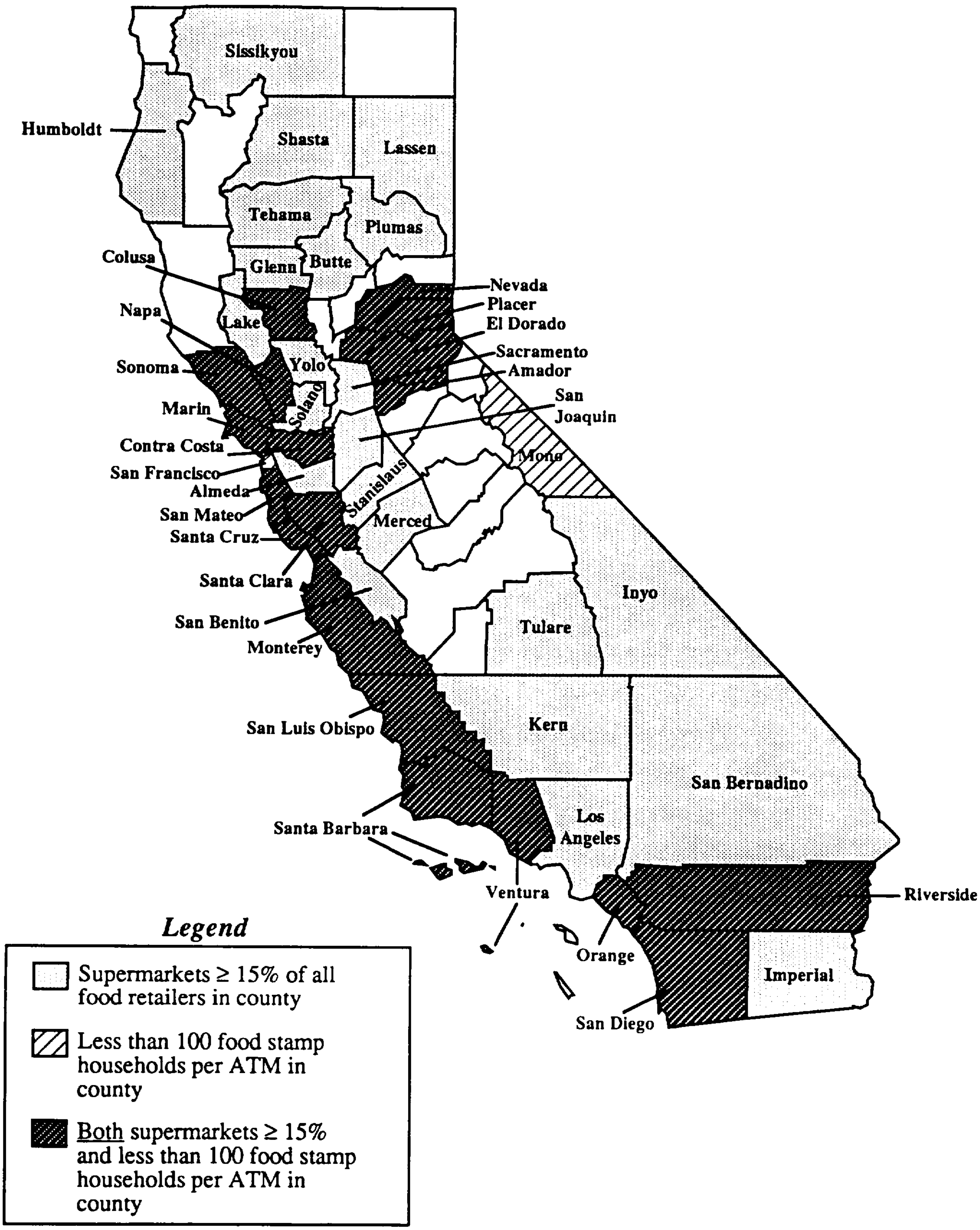
[6] The threshold values of >=15% for supermarkets and <=100 per ATM for food stamp households were set after examining statewide distributions for these variables. Threshold values could be adjusted for each state to refine the model, although for the purposes of this exercise the same values were used for California and Missouri.

[7] This effect raises the issue of other potential conditions for which the "HH per ATM" indicator would need refinement. For example, poorer urban counties with large unbanked food stamp populations and few ATMs would reflect poor potential for EBT implementation. Implementation could be warranted, however, if there is a strong telecommunications and ATM/POS infrastructure in surrounding counties that could be leveraged. Similarly, some rural areas with few food stamp households and few ATM

Focus On: California
County-Level EBT Potential



information gained during our interviews with the state's shared networks and ATM/POS industry press: The current number of POS devices in the state (approximately 18,000) is expected to double in the next six months. We noted earlier that there is apparently a high correlation between ATM development and the somewhat lagged development of POS. With so many counties strong in ATM concentration, it reasons that POS expansion is not far behind.

Exhibit I-10 presents the county-level analysis of EBT potential for the final state in our focus: Missouri. Missouri presents an interesting analysis because it has a significant number of counties with supermarkets having a strong foothold compared to total food retailers. ATM development, however, is relatively minimal, with greatest proliferation in counties in a radius around St. Louis.

Our interviews at the state agency level indicated that a small portion of St. Louis City is considering off-line SmartCard benefit delivery, in the wake of strong salesmanship by a vendor. The state, however, has adopted the "wait-and-see" approach to EBT implementation, pending further study and results from other state's demonstrations. Our analysis appears to support this position strongly. While the state's retail food infrastructure hold strong potential for EBT, the lack of a well developed shared network of ATMs prescribes a costly state role in bringing POS to the retailers. As we have seen, states are increasingly reluctant to make an investment of such magnitude. Thus Missouri, like many others, is dependent on further EFT/ATM developments by its key private sector players.

g. Description, History, and Future of EBT in Other Benefit Programs

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machines could give a falsely positive indicator (i.e., fewer than 100 HH per ATM). In fact, the one county in California for which the HH/ATM indicator is positive but supermarkets are not (Mono County) is rural and exactly meets these criteria. We recognize the limitations of our measures, and the need for refinement in some cases beyond this conceptual phase.

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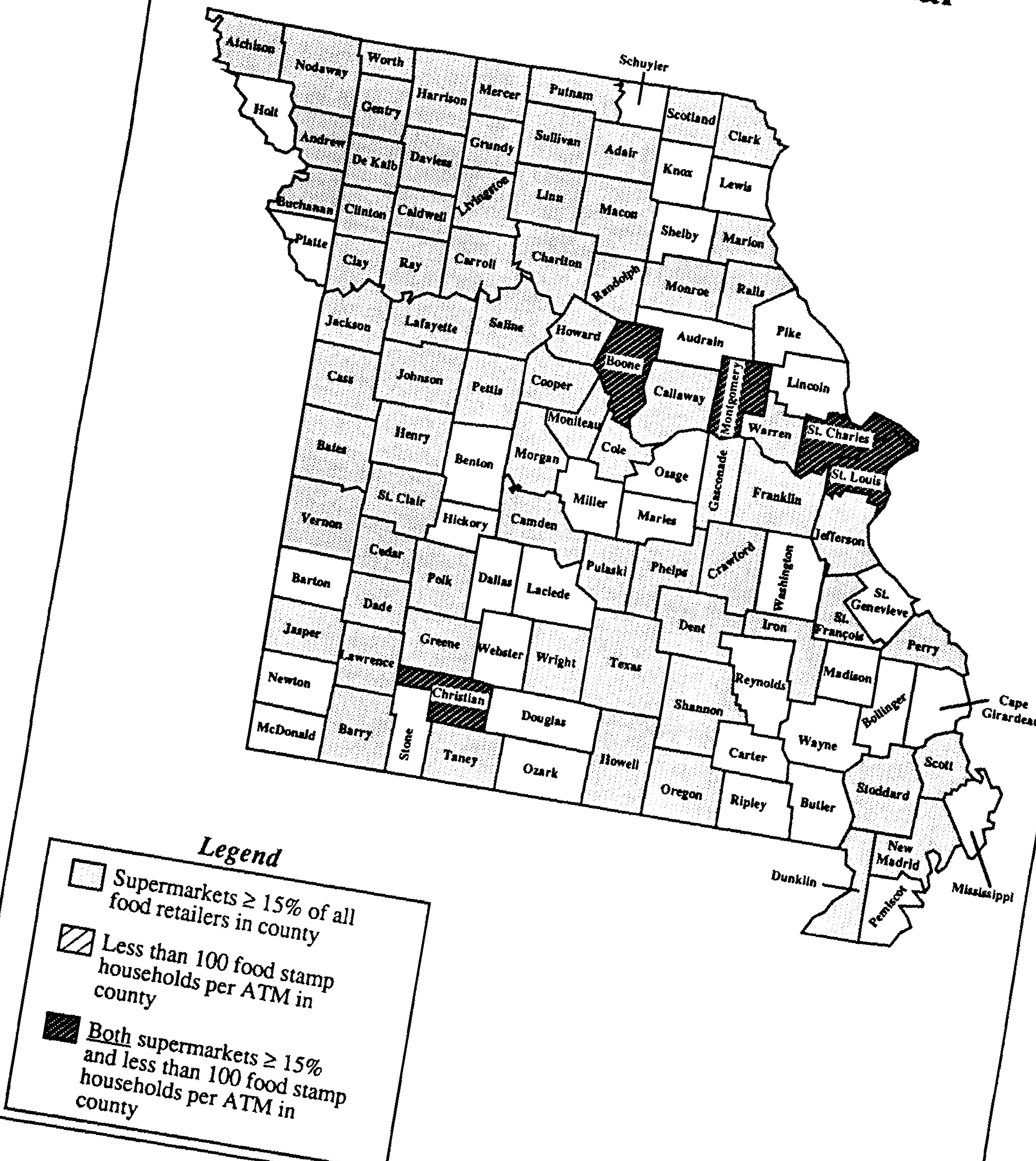
Exhibit I-

Focus On: Missouri
County-Level EBT Potential



As discussed in the previous sub-section, the development, application, and implementation of EBT technology is a government-wide initiative. This concept has been embraced as well at the state level, with the realization that cost-effectiveness is often dependent on the scale economies of integrated EBT implementation. The Treasury Department's Financial Management Service has reported, however, that "in spite of the availability of proven, cost-effective electronic funds transfer (EFT) techniques, 59% of Federal benefits and nearly 100% of state-administered benefits are still paper based."[8]

In this section, we discuss the historical use of EBT in benefit programs other than food stamps, from the perspective of literature on applicable demonstration projects and insights gained through our state agency canvassing effort. This discussion is structured in terms of selected direct Federal benefit programs, and selected state-administered benefit programs.

i. Direct Federal Benefit Programs

One of the benefits seen in the implementation of EBT in direct Federal benefit programs is the ability to reach the vast population of current recipients that are unbanked. recent estimates indicated that at least 50 percent of Supplemental Security Income (SSI) recipients are unbanked, with an annual benefit volume of over $7 Billion. Similar estimates for Old-Age, Survivors, and Disability Insurance (Social Security) indicate that up to $30 Billion (of a total $220 Billion) in benefits volume are distributed annually to the approximately 14 percent of recipients that are unbanked. These populations have not traditionally been able to participate in the Federal direct deposit/electronic funds transfer (DD/EFT) program which has been operational since 1976. The total unbanked population that could be potentially served by EBT has been estimated between 8 and 15 million households.

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[8] *From Paper to Plastic: The Electronic Benefit Transfer Revolution*; Department of the Treasury, Financial Management Service; Washington, DC; 1990, page 1.

For Federal benefit programs, ***Supplemental Security Income (SSI)*** has been the focus of an EBT pilot project initiated in Baltimore, Maryland in November 1989. At the Federal level, this collaborative effort between the Social Security Administration and Treasury's Financial Management Service lead to the introduction of the "SecureCard" for recipient access to benefits through ATM and POS terminals. This pilot program is the first EBT demonstration involving the delivery of direct Federal benefits.

While the potential exists for extension of this to Social Security benefits, no projects have yet been initiated. Many states contacted indicated their willingness to tie EBT of state-administered benefit programs to that of direct Federal benefits. This potential appears to be still in the development phase, and greater communication between the states and Federal government on this matter is anticipated. Some states commented that they are hesitant to get involved in the EBT delivery of direct Federal benefit programs if it means significant changes in their current activities.

ii. State-Administered Benefit Programs

Of state-administered benefit programs, ***Aid to Families with Dependent Children (AFDC)*** has received by far the most "testing" through EBT demonstration projects. AFDC is being delivered electronically in demonstrations in New Jersey; New York City; Cedar Rapids, Iowa; Ramsey County, Minnesota; Baltimore, Maryland (going statewide); and Albuquerque, New Mexico. The Ramsey County pilot program was the first in the nation to dispense public assistance benefits via network ATMs and POS terminals. This pilot has been cited for its successful outcome on recipient preferences and costs. Eighty-eight (88) percent of benefit recipients said they preferred EBT to paper issuance, and costs to administer the program fell below those for the comparable check environment.

The delivery of ***Unemployment Insurance (UI)*** and ***Child Support Enforcement (CSE)*** payments have also been addressed through EBT demonstration projects. In Tacoma, Washington the Washington State Employment Security Department initiated a program to distribute UI payments through ATM and POS terminals. Recipients in this program would call in weekly with information on eligibility. This call would be handled by an audio response unit, payment eligibility would be verified, and a choice of disbursements including direct deposit, ATM/POS, and a check would be offered. The program has been very well received, with acceptance and satisfaction rising since its inception. Statewide implementation of the program has the potential to make Washington a beacon for other statewide UI EBT efforts.

Child Support Enforcement payments are being delivered through EBT in the Albuquerque and Baltimore demonstration projects. Many other states have commented on their desire to eventually incorporate CSE into their menu of benefits being delivered electronically.

In sum, the electronic delivery of direct Federal and state-administered benefits <u>other than food stamps</u> is viewed by many as less costly and easier to implement than food stamp EBT. Without the need for POS devices in retail food stores, bringing non-food benefits on-line for EBT involves mainly the shared networks and their ATM infrastructure for delivery. Nevertheless, Federally funded demonstration projects have largely been addressing the delivery of these non-food benefits when <u>integrated</u> with food stamp benefits. This reflects the leading role FNS has taken in developing a substantial EBT research and demonstration program; a role that other Federal agencies are following closely.

B. <u>Concept Papers</u>

In this section, the **Price Waterhouse Team** presents brief responses to each of the three concept areas noted in the RFP. The concept papers address:

- Assessment of EFT/EBT security and vulnerability
- Evaluation of alternative food stamp issuance systems
- Assessment of industry standards for EFT networks

Each of the concept papers briefly examine issues germane to the problem and describes a methodology for completing the assessment.

1. Concept Paper 1: Assessment of Electronic Funds Transfer (EFT) Security and Vulnerability and Implications for EBT Systems

The paper food stamp coupon has been the traditional medium of delivering program benefits. The paper coupon has the perceived advantage of assuring that benefits from the Food Stamp Program are used to purchase food. At the same time, the paper coupon has costs and vulnerabilities associated with its use. The obvious vulnerabilities of the paper coupon have been theft of coupons from any one of several points in the issuance and redemption cycles, use of coupons to purchase food items that are not program eligible, and the use of coupons as a medium of exchange for other, non-food items including cash. The last practice, commonly called "trafficking" causes the most visible loss of public confidence in the program. Other misuses of program benefits and problems with the paper food stamp coupon exist, but they are not usually considered vulnerabilities of the coupon itself. These problems include over and under issuances, persons receiving benefits while not meeting program eligibility requirements, the giving of cash change for non-whole dollar purchases, issues relating to coupon use, handling, processing, and funds settlement, and the stigma associated with food stamp use at the check-out counter.

The purpose of this concept paper is to describe the objectives, basic issues, and technical approach to assessing the security, vulnerability, and implications of using Electronic Funds Transfer (EFT) for EBT systems.

a. Objectives

The objective of replacing paper food stamps coupons with Electronic Benefits Transfer (EBT) is to improve cost effectiveness of administering the program, reduce trafficking, eliminate benefit theft, improve management and control of benefits, and improved management of processing and funds settlement. Although EBT may reduce or eliminate many of the primary problems associated with the paper food stamp coupon program; it creates new challenges associated with the electronic transfer of information.

b. Issues

For the purposes of this concept paper, we will categorize the EBT system and its potential vulnerabilities into four levels: Benefit users, food retailers, third party service network providers, and the Federal/state governments. The following paragraphs discuss these categories and their primary security and vulnerability issues created by the use of Electronic Funds Transfer (EFT) with the EBT system.

- **Benefit Users.** Benefit users are the persons who will use EBT to receive benefits prescribed by the EBT program. The benefit user will use EBT media, e.g., Smart Card, Debit Card, or Credit Card to pay for authorized purchases from Food Merchants. Security and vulnerability issues associated with Benefit Users include crimes perpetrated by the Benefit User and against the Benefit User. Issues addressed should include at a minimum:

  -- EBT Media Alteration. The unauthorized alteration of Smart or Debit Cards which have a valid Personal Identification Number (PIN) is possible in today's advanced technical environment. The system design could limit the number/amount of authorized purchases available on one card and minimize the impact of alteration or theft. However, the cumulative effect of frequent alterations in an eligible population of 20 million users could create a unacceptable account balance reconciliation and loss to the

program. This security and vulnerability issue affects the ATM or POS operations and would not directly affect the EFT Network.

-- Unauthorized System Access. An increase of computer crime necessitated the Computer Protection Act of 1986. Innovative and industrious computer criminals have devised mechanisms and procedures to penetrate the most secure environments, and present a considerable threat to the security and vulnerability of the EFT/EBT system. The locations for system access must be routinely monitored and controlled to reduce the risk of unauthorized access at the POS, ATM, EFT Network or VAN, and transaction destination.

-- Automatic Teller Machine (ATM) Crime. ATM crime includes vandalism, robbery, and murder. Benefit Users have brought law suits against Third Party Service Networks, ATM facilities, and the ATM card issuers when crimes occurred. While it is anticipated that an FSP EBT terminal would be installed at one or more points of sale within a food store, thus somewhat more secure, a combined or multi-program system including AFDC or another direct cash benefit would share the same vulnerability to crime against the Benefit User. This issue affects the vulnerability of ATM/POS in the EBT environment.

-- Handicapped Access. Recent requirements for handicapped access to ATM/POS suggests these devices should be accredited for use by handicapped users. If the ATM/POS are not accessible, the EBT system could suffer adverse public opinion which could deter its use by the Benefit Users. This is a vulnerability issue for ATM or POS.

-- Counterfeit Access Media. Although Credit Card, Smart Card and Debit Card counterfeiting is possible, a comprehensive management and control system for cards, their control numbers, and PINs would reduce the possibility of successfully defrauding the EBT system. This is a security and vulnerability issue which would affect ATM or POS in the EBT System.

- **Food Retailers.** Food Retailers use electronic devices to price, register, and sell authorized food products to Benefit Users. The EBT systems located in the Food Retailer's privately owned facilities are a source for potential vulnerability in the following areas:

-- Over/under Dispensing. An ATM/POS terminal in an EBT environment can either over or under dispense the requested funds/benefits or display the incorrect FSP balance available against which food purchases are to be made. Most ATM/POS units contain sufficient safeguards to prevent this from occurring; however, EBT system failures at the ATM/POS, the EFT network, or the EBT system control could cause this vulnerability issue.

-- POS/Scanner Accreditation. POS/Scanner systems located in privately owned merchant facilities could be illegally altered to either increase the cost of an authorized item or change the classification of an item from unauthorized to authorized for purchase by EBT Benefit Users. An accreditation or certification program for POS/Scanner systems could reduce the vulnerability of the EBT system to unauthorized modification and the subsequent misuse of benefits.

- **Third Party Network Service Providers.** Third Party Network Service Providers are more commonly known as Value Added Networks (VAN). The VAN is the data communications backbone on which the EFT system operates. It is also the most vulnerable component of the EBT system. Security issues associated with VANs include:

-- Electronic Vandalism. Electronic vandalism is the unauthorized access or destruction of networks and computer systems. "Viruses" are a common form of electronic vandalism. Electronic vandalism could adversely affect the security and vulnerability of ATM/POS, VAN, EFT network, or EBT control systems.

-- Data Encryption. A common method of protecting information from theft or alteration is data encryption. Data encryption scrambles information based on algorithmic formulas and is normally software based. Many methods exist to encrypt data including the Data Encryption Standard (DES) algorithm of key-based encryption and authentication and the Public-Key encryption technique. The data encryption issue affects the security and vulnerability of ATM/POS, VAN/EFT network, or EBT control systems.

-- Link Encryption. Another technique used to ensure the integrity of data is Link Encryption. Unlike data encryption which scrambles the data, Link Encryption scrambles the communication link which transmits the data. Link encryption is generally hardware based and is capable of

transmitting high volumes of data. The link encryption issue affects the security and vulnerability of ATM/POS, VAN/EFT network, or EBT control systems.

-- Data Integrity. Data integrity is the transmission and receipt of information without errors or duplication. Data integrity is essential to the operation of a secure and stable information system. Data integrity must be ensured from point of entry, e.g., ATM/POS, to final destination, e.g., the EBT control system. This security and vulnerability issue affects the entire EFT/EBT system.

-- Data Confidentiality. Data confidentiality ensures authorized access to computer generated, used, transmitted, and stored information. The Electronic Communications Privacy Act of 1986 establishes the legal requirements for data confidentiality. The data confidentiality issue affects the security and vulnerability of Benefit users and Merchants operating on at the ATM/POS, VAN/EFT Network and EBT control system.

-- VAN Billing and Reconciliation. Since EFT transactions incur a VAN processing expense to the sender, the EBT system should reconcile actual transactions transmitted to transactions billed by the VAN/EFT Network. The absence of a bill reconciliation capability would increase the vulnerability of the EBT system to inaccurate billing for use of the VAN/EFT Network.

-- Timeliness of Acknowledgments. Acknowledgment of EFT transactions notifies the sender that the transaction was transmitted over the VAN/network and received at the destination. A time delay in the receipt of the acknowledgement could affect the vulnerability of the EBT system to inaccurate account status and cause a delay in processing at the ATM/POS.

-- Transparency of System. Transparency of the system is the of the operation of the EBT/EFT system without the intervention of users or operators once initial entries are made at the ATM/POS. When the EBT/EFT system operates transparently, the opportunity for unauthorized access or intervention and subsequent security breach is reduced. This security and vulnerability issue affects the ATM/POS, the VAN/EFT network, and the EBT control system.

-- System Flexibility. Industry standard communication protocols and input devices at ATM/POS ensure the flexibility of the EBT system. It also reduces the opportunity for surreptitious defeat of the EBT security features. Unaccredited and unapproved protocols or data entry devices may be capable of enabling "trapdoors" to the system and cause the violation of system security and integrity at ATM/POS and the VAN/EFT network.

-- System Maintenance Management. (Error and failure logs, management reports, analysis of errors, and diagnostics.) To ensure reliable operation and data integrity, the system must provide error/failure logs and analysis reports. These tools can assist the detection and correction of errors or attempts to breach the security of the EBT system at ATM/POS, VAN/EFT network, and EBT control system.

-- Audit Trail. Many regulations require an audit trail of EFT transactions from the point of origin to the final destination. These trails provide security checks, reconciliation evidence, and testify to the integrity of the data transmitted. This issue affects the vulnerability of ATM/POS, VAN/EFT network, and EBT system control to violations of statutes and regulation.

-- Tracking and Control Mechanisms. Tracking and control mechanisms provide the capability to reroute and audit transactions over alternate data communications paths in the event of a network node or route failure. These mechanisms ensure data integrity and reduce the vulnerability of the system to unauthorized modification of data on the VAN/EFT network.

-- Administration (performance and reconfiguration). The EBT must operate reliably; therefore, EBT system administration is key to ensuring all security, reconciliation, operations, and reconfigurations of the system operate within prescribed system guidelines. The EBT system administration issue affects the security and vulnerability of ATM/POS, VAN/EFT network, and EBT system control.

-- Local Legislative Implications and Legal Issues for City and State. Local or state laws may require specific handling or processing of EBT transactions in the areas of audit, security, ATM/POS location, and distribution of funds. This issue affects the vulnerability of ATM/POS and the VAN/EFT network.

-- Central vs. Decentralized Databases. Decentralized EBT databases would require the transmission of information to more locations than a centralized database system. The additional transfers through VAN/EFT networks or data handlers increases the risk of information theft or alteration. This security and vulnerability issue affects VAN/EFT networks and EBT control systems.

-- Electronic Signatures. Electronic signatures are in their infancy; however, they may be an integral part of the EBT system. Electronic signatures should follow industry standards, contain no trapdoors, and use a public key control. This security issue affects VAN/EFT networks and the EBT control system.

-- System Availability. System Availability is the ability to provide continuous services to users. A system failure could be caused by lack of emergency back-up, power failure, or a telephone failure. A system failure could leave Benefit Users without access to funds or benefits, thereby forcing the EBT to rely on manual back-up at the point of sale. Manual intervention of an automated system introduces additional vulnerability and the opportunity to defeat system security at the ATM/POS.

-- Network Service Fees. EBT system pricing adjustments can occur after an EBT system begins participation in a VAN/EFT network. An VAN/EFT network could alter its fee schedule to the determent of one class of network participants. An alteration of this type has occurred and resulted in great loss of money to the participants and a subsequent, costly legal action. This vulnerability issue affects the VAN/EFT.

-- Privacy. A violation of privacy could occur if the VAN/EFT network compromises a Benefit User's identity or levels of benefit. This comprise could occur by accident, by outside intrusion into the VAN/EFT network, by collusion, telephone line tapping or several other means. This vulnerability issue affects the VAN/EFT network and the EBT control system.

-- Anti-trust/price fixing. Anti-trust/price fixing concerns led to the demise of the ENTREE point-of-sale effort and could appear again with the use of EFT networks. An EBT system could either be drawn into a legal action or be the victim of the anti-trust or price fixing collusion. This vulnerability issue affects the VAN/EFT network.

- **Federal/State Government.** The Federal/state governments perform system management, administration, and control of the EBT system. This level accesses and uses funds transfer and accounting systems over several networks common to the banking and financial industry. One key issue of concern is access to FSP accounts. State and local governments will have access to the resources of EBT system through the VAN/EFT network. A control mechanism which prevents the unauthorized transfer of funds between accounts is essential to guarantee the integrity of the EBT system. This security and vulnerability issue affects the EBT control system.

Financial systems using Value Added Networks and EFT networks are widely used today. The Nation's principal financial institutions operate with reliability and integrity in an environment which is characterized by the preceding security and vulnerability issues. Electronic Data Interchange (EDI) and EFT systems have evolved to provide a reliable and secure backbone using access and control mechanisms, data encryption, audit trails, system administration, and flexible design for interoperability in diverse automation environments. The EBT system may introduce new challenges to the security and vulnerability of data communications; however, the proven reliability of existing systems indicates that the EBT system using VAN/EFT networks is not only possible, but practical.

c. Technical Approach

The assessment objective is to assess the security/vulnerability issue, and to determine the implications for EBT systems, several steps are required. The following technical approach addresses the objectives of assessing the EFT security/vulnerability issue and implications for EBT:

- Develop a complete perspective on EFT networks by
  - -- Review of on-hand experience.

- -- Contacting members of the shared network executives associations for insights, such as National Automated Clearinghouse Association (NACH).

- -- Review available transaction and EFT network audit papers, security plans, and integrity controls.

- -- Review the Bank Administration Institute's publication Control and Audit of EFT.

- -- Gather copies of EFT network Operating Rules and By Laws and examining them for the placement of liability and handling of vulnerability/security issues.

- -- Gathering and reviews copies of EFT networks third party security and operational audits.

- Based on the results of the reviews and data gathering, develop a data collection plan. The plan would focus of checklists and a questionnaire to define the frequency and severity of vulnerabilities/security issues.

- The survey sample would include large EFT networks, smaller networks, (both independent and shared networks would be included), third party EFT network operations, selected Federal and state network regulators, and commissions of banking and savings and loans in several state within which EFT networks operate. Data would be collected using a combination of face-to-face, telephone, and by mail interviews.

- Following data collection, statistical methods appropriate to the nature of the data would be used to provide summary reports and analysis.

- Following analysis, unsampled representatives of each survey sample segment could be interviewed to judge the reasonableness of the results. Large discrepancies would be resolved with further data gathering or the development of reasonable explanations or alternatives.

The result of the investigation of EFT network vulnerabilities and security issues would be a significant document. Likely sections for that document include:

- A management summary.
- The definition of EFT networks from historical, technological, legal and political perspectives. Included would be schematics, system and transaction flows, the analysis of activities within and EFT network.
- The definition of vulnerability/security issues and their location within EFT networks. Included would be any available statistics on size/frequency of occurrence and a literature review and reference to available studies or documents.
- A history of any known vulnerabilities/security issues and any remedial actions or resolutions, if available.
- A full exposition of the data gathering plan. Included would be a discussion of reasons for inclusion of data elements, methodology, sample, and results.
- A complete discussion of all finding with emphasis on unexpected finding and significant deviations from expected results.
- The development of a matrix of vulnerabilities and security issues and expected costs of losses and liabilities resulting from them.
- A discussion of the implications of EFT network vulnerabilities/security issues on EBT system
- A discussion of types of EBT systems and their relationship to EFT network vulnerabilities/security issues.
- A summary of what an EBT system can reasonably do to eliminate or minimize vulnerabilities/security issues in EFT network.

2. Concept Paper 2: Evaluation of Alternative Issuance Systems

a. Background and Issues

FNS provides nutrition assistance to low-income households through the Food Stamp Program. Currently, except in certain ongoing demonstrations, benefits are delivered to recipients in the form of paper food stamp coupons in $1, $5, and $10 denominations. These coupons are exchanged for eligible food items at authorized retail stores throughout the United States. Since the early 1980's, FNS has demonstrated and evaluated electronic benefit transfer (EBT) technologies and cash-out as potential alternatives to the current paper-based coupon issuance system. The goal of this program has been to find cost-effective ways to reduce administrative costs, improve the integrity and accountability of the Food Stamp Program, and improve service to food stamp recipients without increasing burden on food retailers and financial institutions.

Electronic benefit transfer replaces the paper food stamp coupons with a plastic card used to access benefits stored in a database. In on-line EBT systems, the database resides on a host computer that is accessed through a point-of-sale (POS) terminal each time a recipient purchases eligible items at an equipped check-out counter. The recipient presents a magnetic stripe card encoded with identifying information and verifies identity using a PIN. The POS terminal dials into the host computer to verify benefit availability, debit the recipient's account, and credit the retailer's account. Funds for the day's transactions are credited to the retailer in a daily settlement through the Automated Clearing House (ACH). On-line EBT has been demonstrated to be feasible, acceptable to all players, and capable of improving program integrity, but costly to administer and limited to applications where there is ready access to telecommunications. The potential to serve multiple programs with the same system and to piggy-back on commercial POS systems make continued exploration of this technology attractive.

In one form of the off-line EBT, the recipient's identifying and benefit information resides in the card itself. The card contains a microchip with both memory and a processor capable of interacting with the POS device and storing transaction information. Each transaction

between the check-out counter terminal and the card verifies recipient identity and balance, debits the purchase amount, and updates a recipient transaction history. The store terminal, meanwhile, accumulates the day's transactions. Each day, these transactions are transmitted to a host computer to update retailer and recipient records. Actual credit to the retailer is provided through the ACH. The off-line EBT technology is being demonstrated and evaluated because it shows initial promise of decreasing vulnerability to fraud and abuse and, by eliminating the need for on-line connection to a host computer, reducing cost and broadening the applicability of an EBT system.

Under cash-out, food stamp benefits are issued in the form of a check or cash, alone or in combination with cash assistance programs. Recipients receive checks for the benefit allotment and deposit them in bank accounts (rarely), cash them at retail stores, or pay to cash them at currency exchanges. Issuing checks instead of coupons streamlines program administration and can reduce costs significantly. However, having a full month's allotment in cash at once may create budgeting problems for some recipients and subject them to greater risk of loss or theft, and costs of cashing checks reduce the effective value of the benefit. Given cash instead of coupons, recipients are not constrained to spend the benefits on food. The likelihood that spending patterns and household food purchases will change under cash-out has been a primary evaluation concern in evaluations of cash-out demonstrations. Cashed-out benefits could in the future be issued through ATMs using direct deposit into special debit-only accounts. That could further reduce the administrative cost of issuance and alleviate some of the other potential drawbacks of cash-out.

External validity represents the confidence one can have in generalizing the results of an evaluation beyond the particular instance that was studied. Innovations in social programs develop through stages from concept testing through demonstration and limited applications to

full-scale rollouts. At each point in the development, evaluations typically have different objectives. The table below describes the typical developmental sequence.

Stage of Development	Evaluation Objectives
Concept testing	To explore the feasibility of the concept through analysis of the features of the proposed program or program element. Emphasis is on careful analysis of the need for the program, the maturity of the technology for meeting that need, the existence of barriers to its successful implementation, and estimated costs and benefits of implementing the program.
Demonstration	To test whether the program can be implemented as designed and whether its outcomes are as predicted. Emphasis is on documenting the process so that future implementations have a roadmap to go by and on careful analysis of impacts. Internal validity is important so that outcomes can be attributed to the program being tested. External validity is typically low because of the special circumstances and few sites for the demonstration.
Limited application	To explore whether the program can be implemented successfully in a variety of locations having different characteristics. Internal validity is important; external validity is crucial to support decisions for full-scale implementation.
Full-scale application	To assess the degree of implementation across locations and the impacts of the program in its typical instance. Both internal and external validity are important.

Evidence about the cost-effectiveness and acceptability of alternative issuance systems is being developed incrementally. The on-line EBT concept has been developed through concept testing, the original Reading demonstration and the state take-over, and is now being evaluated in several state-initiated demonstrations. Off-line EBT is about to be tested in Dayton. Cash-out has been evaluated in Puerto Rico and among elderly SSI households, and is now being tested in several

experimental demonstrations. The Maryland expansion of the Baltimore Pilot will be the first state-wide application of EBT.

To date, evaluations of EBT demonstrations have lacked external validity because of the small number and special nature of the test sites. The encouraging results from demonstrations thus far may not apply in areas with lower densities of food stamp recipients or with less enthusiastic retailers and local welfare managers.

The next few years will bring more limited applications and full-scale applications of alternative issuance systems serving the Food Stamp Program and other assistance programs as states choose to implement operational EBT systems. The development of alternative issuance systems has reached the stage in which external validity of evaluations is critical to guide policy for full-scale roll-outs. It will be important to identify the geographic and demographic characteristics of areas in which EBT and other issuance systems are more or less likely to be administratively cost-effective and acceptable to recipients, retailers, and financial institutions.

b. Evaluation Objectives

The evaluation objectives for any roll-out of an operational alternative issuance system should include at least the following. Specific details of each issuance system will give rise to additional, less generic, objectives and research questions.

- Describe the development, implementation and operation of the EBT or cash-out issuance system including special features needed to accommodate remote or low-density segments of the food stamp population and any other assistance programs that may participate in the system;
- Estimate the impacts of the alternative issuance system compared to the paper-based system it replaces on program participation and benefit costs for each program;

- Estimate and compare the administrative costs of the alternative system to the costs of the paper-based system it replaces for each program using the system;

- Describe and compare the costs and other impacts of the alternative issuance system on each of the system participants including recipients, retailers, and financial institutions;

- Estimate and compare the cost-effectiveness of the alternative issuance system within urban and rural areas and for different segments of the caseload.

c. Technical Approach

The evaluations undertaken in the course of this task-order contract will be driven by immediate information needs of FNS. Projects will typically require fast initiation and execution in order to collect baseline date prior to program changes. At times, part of the baseline data may have to be collected retrospectively. The generic technical approach described here will be built around standard methodologies developed for other alternative issuance evaluations, tested, and approved by OMB. The use of existing instruments or question modules, procedures, data structures, and analytic approaches to the extent possible will expedite starting and completing projects. It will also help keep findings comparable across evaluations. As needed, these standard methods will be modified and fine-tuned to meet the specific objectives of the task.

i. Design

In roll-outs there will seldom be good opportunities to use control groups or comparison sites. Designs will likely be pre-post in which costs and impacts of alternative issuance systems are compared to the costs and impacts of the paper systems they replaced. As in the Maryland state-wide expansion of the Baltimore EBT pilot, threats to internal validity of the evaluation will have to be checked through collateral data rather than be controlled through comparison sites.

If the program implementation is staggered or covers only part of a state, the design should include that feature as a means of controlling history as a threat to validity. Achieving control is most important for analyses of impacts on participation and benefit costs since those fluctuate in response to many causes other than the issuance system.

The design should support sensitivity tests of the ability to generalize costs and impacts. Contrasts between urban and rural areas, or counties with differing densities of food stamp recipients would support investigations of what systems work well in different kinds of environments.

ii. Instrumentation

Through the several evaluations of EBT demonstrations and the cash-out experiments, instruments have been developed and standardized for the sake of comparability across studies. Evaluations under this contract should use existing instruments except where specific objectives cannot be met without new or revised modules of questions. Current instruments have been designed around an "ingredients" approach to estimating administrative cost of issuance and costs of participation in the Food Stamp Program for recipients, retailers, and financial institutions. Time-study logs and observation protocols should also be retained to the extent they are applicable so that costs of different systems can be compared.

iii. Samples

Samples will need to be drawn from populations of affected recipients, food retailers, financial institutions, and issuance workers in state and county welfare agencies. Recipient samples should be stratified on household characteristics related to cost of participation in the program and on mode of issuance in the baseline period. With effective stratification,

approximately 1,600 completed household interviews in both baseline and post-implementation periods should be sufficient for adequate statistical power.

Food retailers should be sampled within store-type strata to assure that supermarkets, grocery stores, convenience stores, and all other stores are represented. Within strata, stores should be sampled with probability proportional to their volume of food stamp redemptions as obtained from the Minneapolis Computer Support Center. Depending on whether the implementation is local or statewide, sample sizes may range up to a total of about 300.

If the evaluation requires estimates of the cost of coupon redemption handling by financial institutions (FI) that serve retailers, then a representative sample of approximately 80 will be needed for estimates with precision of ± 10 percent of the mean cost. If the evaluation objectives are confined to measuring preferences and trends, then much smaller purposive samples of FIs should be sufficient.

To measure administrative cost, it will be necessary to conduct time studies with samples of dedicated issuance workers, intake workers, and ongoing caseworkers. In evaluations of program innovations managed from a single office and in smaller offices participating in larger-scale implementations, all such workers should be measured. In large-scale implementations with multiple offices managing the alternative issuance system, random samples of caseworkers and issuance workers should be taken when their numbers exceed 30 in an office.

iv. Data Collection Methods

Recipient data collection should consist of interviews conducted by telephone, when possible, or face-to-face. Experience suggests that about half of recipient households can be interviewed by telephone. To meet some objectives, focus groups with recipients or ethnographic observation may be more appropriate.

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Interviews with retailers, financial institutions, and welfare officials should be done in person at scheduled appointments. Pre-notification by mail and telephone calls to schedule appointments will boost cooperation in these interviews.

The impacts of point-of-sale EBT systems on check-out counter productivity should be assessed through observations of a substantial number of transactions involving payment by food stamp coupons, cash, checks and EBT. A total of 500 food stamp transactions before and after EBT implementation should provide stable estimates of impact.

Time studies in welfare offices should involve daily time logs kept over a one-month period by all sampled workers. These may be supplemented by observations as needed.

3. Concept Paper 3: Industry Standards for commercial EFT Networks and the Implications for EBT Systems

a. Background and Issues

Standards are a set of rules or guidelines that are generally accepted as the criteria for a specific product or industry. Since standards are used as guidelines, there is usually no enforcement arm in a standards group or within the standard itself. Standards are voluntary and are accepted for the purpose of furthering the particular industry or product. When EFT networks first started in 1976, there were few standards concerning message structure and communications. Cards had been somewhat standardized and represented the most standard segment of commercial EFT. The first network created its own standards for performance and equipment and participants in the network found it necessary to use these standards in order to participate.

As more Automatic Teller Machines (ATMs) and the first Point of Sale (POS) terminals were deployed in environments where they were to be shared by the cardholders of several banks or networks, the need for standardization became more and more obvious. Today, almost any card from any issuer will work in any ATM or POS terminal, anywhere in the country. Standardization played a key role in the development of EFT into a national industry and product. While industry groups met and formulated EFT-related standards, several EFT terminal deployers and card issuers reserved special services for their customers by attaching non-standard enhancements to their cards and terminals. However, these functions are now consistent with industry standards. Functionality varies based on the types of services the institutions want to offer to its customers.

Commercial EFT, which includes ATM/POS and Automated Clearinghouse (ACH) activity, now follow a common set of standards. While there are other commercial EFT activities such as bill payment, wire transfers, and international activities such as SWIFT and CHIPS and Electronic Data Interchange (EDI), the focus is on ATM/POS and ACH; these are the activities most closely linked to EBT systems. Applicable categories of EFT standards include:

- Physical characteristics and encoding of the magnetic stripes of cards
- Programming language and transaction message formats.
- Data and message handling, security, integrity and encryption.
- Characteristics such as physical layouts of terminal keyboards and Personal Identification Number (PIN) pads.
- Performance requirements for equipment and software and activity within networks, whether statewide, regional or national.
- Activities required by state of Federal statutes such as Regulation E for consumer protection and requirements form card organizations such as Visa or Master Card for receipting and magnetic stripe encoding and individual EFT

It is generally argued that EBT systems should try to comply with EFT industry standards. The expressed desire to "piggyback" on the in-place EFT network infrastructure seems to lend weight to this conclusion. The EBT system would be compatible with the in-place, standardized EFT networks. The standardized interfaces should reduce costs of equipment and technical connections, time requirements would be greatly reduced, and the need to develop an EBT system infrastructure for transactions, authorizations, and delivery would be reduced or eliminated. Pressure to piggy-back may inhibit the implementation of special services unique to EBT system offerors, users, and benefit recipients if these services fall outside existing standards.

In fact, many of the issues and concerns raised to date reflect confusion between standards, functionality, and policy. EFT systems can support EBT within the existing standards framework. However some of the major issues raised are best addressed at the policy level. Examples of this include:

- <u>Display of balance remaining on a POS and the POS-generated receipt</u> -- Regulation E provides protection of account related data which is why balance remaining is not printed at the point of sale. Yet the recipient and the check-out clerk need to know this information to assure that the recipient's purchase is within the amount available and because the recipient needs a way to know the balance remaining in his or her food stamp account. Moreover, EFT limits printing of balances to a single account which would not be optimal for recipients in FSP and AFDC, for example.

- <u>Income assistance programs make allotments that do not round to 10's of dollars</u> -- ATM machines do not currently have the capacity to support withdrawals of less than five or ten dollars and do not dispense coin. This creates an unexpended balance at the end of the month that must be carried forward. It also means that the beneficiary does not receive the full monthly allotment. Changes in the benefit amount determination could be used to alleviate this, but would create significant policy and administrative changes. Advocacy groups are likely to register concern about unexpended balances and how they are managed.

- Accommodating the needs of limited-English speaking persons -- ATMs can support two or three languages but without enhancements to the ATM or POS, multi-lingual prompts are difficult to achieve.

b. Objectives

The primary objective of this task is to document industry standards for commercial EFT and understand their implications for EBT systems. However, as indicated above, many of the issues regarding standards and EFT/EBT have already been addressed.

However, the policy issues remain to be resolved, and, therefore, this may be the more appropriate focus. There have been numerous studies and comparisons of EFT standards and functionality and it would be more efficient to synthesize the results of these studies than to conduct another empirical study. We are likely to find confirmation of the fact there are variations in implementation of standards and that several "de-facto" standards exist and are widely used. A most likely finding is that the performance requirements and activities differ widely across EFT networks, in spite of the fact that there is an agreed upon set of industry standards. Again, these differences are likely to reflect differences in functionality more so than problems with standards.

c. Technical Approach

If we approach this activity from the standpoint of developing a comprehensive empirical base of data, then it would be necessary to engage in a range of information collection and analysis activities. These activities are detailed below:

- Collect, review, and analyze EFT network standards and performance requirements and activities.

-- Collect and review all relevant documents from the American Bankers Association including the Accredited Standards Committee C9, Guideline for Implementation of On Line Debit Cards, Regulation E Compliance Guide, the ISO (International Standards Organization) Registry of Card Numbers.

-- Collect and review all relevant documents from the National Automated Clearinghouse Association (NACHA), especially their updated rules and any in process activities such as same day electronic settlement.

-- Collect and review relevant American National Standards Institute (ANSI) documents on standards of financial institutions including: X3.92 on data encryption: X4.13 on transaction cards; X4.16 on card magnetic stripe encoding; X9.1 on track III contents; X9.2 on interchange message specification (Note: ISO 8583 is directly relevant and will be reviewed); X9.9 message authentication; X9.17 algorithm key management; and X9,19 retail message authentication.

-- Collect and review the Electronic Funds Transfer Association's (EFTA) EBT standards document.

-- Collect and review from the Shared Network Executives Association (SNEA) any available documentation on interchange standards, its current national debit undertaking and any requirements, standards, or functional requirements and activities.

-- Collect and review SNEA, if available, the Operating Rules and By laws of its member networks. If unavailable, collect them directly from the networks, at least a representative sample of all size and ownerships.

-- Collect and review from the credit card associations, at least Visa and MasterCard relevant functional requirements and activities and Operation Rules on their national debit products as well as activities in EBT.

-- Collect and review from affected others, such as the Food Marketing Institute, and performance or standards concerns. This would also include a review of pending legislation or voiced concerns such as privacy.

-- Contract and review relevant standards bodies for any work in progress that may effect EFT/EBT.

- Collect and review relevant standards on equipment or electrical components on EFT systems.

- Analyze EBT data requirements and the creation of a data matrix for the Food Stamp Program and other benefit program that are likely to change over to EBT.

  - Collect and analyze all previous EBT documents regarding the Food Stamp Program.

  - Collect and analyze program documents for the Food Stamp Program itself.

  - Review and analyze all pilot programs and collect data sets and requirements.

  - Develop a futures document with FNS personnel for the Food Stamp Program.

  - Review other EBT programs and develop data sets and expected needs.

  - Create a data element matrix across potential EBT programs.

- Compare EFT standards and EBT requirements to produce documentation of compatibilities.

  - Set out major finding from comparison of raw data elements.

  - Document functional requirements and activities specific to EBT systems. Note unusual or unexpected requirements and activities, their origin, manifestations, and effects.

  - Compare EFT data sets and standards with the needs of EBT systems and point out complements and shortcomings.

- Recommend actions and guidelines for EBT systems in dealing with EFT network standards.

  - Recommend standards to be met or partially complied with and any expected outcomes.

  - Recommend standards to be ignored, if appropriate, and document any expected outcomes.

- -- Recommend EBT standard data elements and procedures and provide a summary of advantages of sue and disadvantages of ignoring same.
- -- Recommend functional requirements an activities to be endorsed and sought by EBT systems and those to be discouraged.
- -- Prepare a signification document of all findings.

It is important to understand EBT as a separate "industry" with special needs. The goal of the comparison of EFT network standards to those of an EBT system is two-fold: While there is the desire to comply with commercial industry standards for EBT networks where possible, EBT systems have their own needs, both now and anticipated. They should assure that needs are met and, while they can support EFT networks, they should not be fully defined by them.

C. Implementation Assistance Requirements

The purpose of this task order contract is to assist FNS with research, evaluation, training and technical assistance in relation to alternatives for delivering Food Stamp Program and other assistance program benefits, including such alternatives as Electronic Benefit Transfer and cashout. As noted in the previous sections, FNS has been involved in demonstrations and evaluations of these alternatives and, with the 1990 Farm Bill, EBT will soon be an operational alternative for states. Furthermore, as has been confirmed by our informal survey of state Food Stamp Agencies, states are in need of training and technical assistance as they consider alternatives and implement EBT, with the first task under this contract geared towards providing this assistance. Moreover, with the increasing acceptance and use of EFT/EBT technologies across the Federal and other government levels and with the implications of these technologies for other related income assistance programs, FNS support will be vital to the adaption and adoption of EBT at both the Federal and state levels. This task order contract will play a key

role in implementing and evaluating food assistance and other income support methods of delivery.

The task order contractor must combine a broad mix of professional skills, resources, and experiences to provide appropriate and effective, timely support. By encouraging teaming arrangements, FNS recognizes that it is unlikely for an individual firm to possess the requisite depth and breadth of resources to meet current and anticipated task order needs. Among other attributes, the task order contractor must have:

- The **capacity to understand and respond to FNS's information needs** both in terms of the professional resources and experience of the contractor and in the demonstrated understanding of benefit delivery issues and approaches.
- An **approach to creating task order teams**, including identifying resources, assigning tasks, managing individual tasks, and managing multiple task order assignments.
- A variety of **staff capabilities, skills and experience** in areas ranging from project management, to research design, to POS, EFT/EBT technologies and practices, to technical writing.
- **Corporate experience** in managing multiple subcontractor teams and multiple assignment contracts, in policy research and analysis in food assistance and related areas, and an in-depth understanding of point of sale (POS) and EFT/EBT technologies and their application in both the public and private sectors.
- An **approach to EBT training and technical assistance** for FNS and states which understands EBT technology, operations and issues and has tested methods for developing and implementing training packages.
- An **approach to management and staffing of training for technical assistance support** which incorporates the appropriate mix of EBT expertise and training skills for broad based support on a national basis.

Our proposal to provide task order support to FNS address all of the requirements of this contract. Section I of this proposal demonstrates the **Price Waterhouse Team's** capacity to understand and respond to FNS's information needs. Our capacity to respond to FNS's

information needs is further demonstrated by the depth and breadth of our professional resources described in Section II. Our corporate resources consisting of Price Waterhouse and five subcontractors respond directly to FNS's encouragement to form multi-disciplinary teams to meet the Agencies current and potential support needs. Section II also describes our approach to managing task order contracts with multiple subcontractors, and making appropriate task order assignments. While this team possesses the requisite policy analysis and research skills and experience to build and expand upon the research conducted by FNS over the last decade, our hands-on practical experience with EFT/EBT technologies in both the commercial and government settings and reputation for independence and objectivity are major distinguishing features of the **Price Waterhouse Team**. Finally, Section III addresses the requirements of Task Order 1.0--to provide EBT training and technical assistance--and describes a project team and management approach which fully utilizes the collective resources of the Price Waterhouse Team. We are confident that the Price Waterhouse Team will provide FNS fresh, vigorous and thorough support under this challenging assignment.

II. GENERAL STAFF CAPABILITIES AND CORPORATE EXPERIENCE

This section describes our staff capabilities and corporate experience relevant to undertaking this task order contract assignment. It describes our overall project team organization and process for assigning task orders and identifying and committing appropriate staff resources. Our discussion is organized into the following subsections:

- Creating teams to staff task orders
- Staff capabilities and skills
- Relevant project examples

A. Creating Teams to Staff Task Orders

The purpose of this delivery order contract is to support FNS in conducting a variety of research, evaluation, training, and technical assistance efforts related to both the delivery-method and form of food stamp and other assistance program benefits. Effective overall management of the contract and of each task order assignment is critical to the success of work to be performed. The selected offeror must have effective management procedures and systems in place to mobilize and commit appropriate resources quickly to satisfy the diverse needs of FNS Headquarters, Regional Offices, and State FSP Agencies as they address food assistance implementation and evaluation issues. Price Waterhouse has the demonstrated capacity to manage our projects team's diverse resources, to manage multiple projects simultaneously and the ability to respond to varying workload requirements in a timely fashion. In addition, the contractor must be committed to delivering high quality services and products on schedule and within established budgets.

Creating teams to staff task orders includes several steps which are summarized in Exhibit II-1. The first step is the identification of the prime contractor and subcontractors with the requisite skills and resources to address the various topic areas identified in the RFP. These corporate resources must then be combined into a project organization that ensure the smooth coordination between the prime contractor and subcontractors and the project management and functional skills embodied in the collective project team. With this project organization, the project management should be in a position to create teams to staff particular task orders, execute the tasks, and undertake overall project and task order management in a framework with established procedures for management and control.

As is described in this section, the **Price Waterhouse Team** is committed to the execution of task order assignments under this contract within a framework that ensures the efficient management and control of our team's diverse skills and resources. We have proven management procedures and systems in place to:

- Ensure our ability to respond rapidly to client requests
- Staff projects with professionals in pertinent functional and programmatic areas
- Exercise effective management control over all contract activities, paying particular attention to the control of task order assignment costs and quality.

The balance of this section describes our proposed approach to technical management of this contract. It demonstrates our ability to provide FNS with:

- Quick response to task order requests
- High quality products and services
- Management control and accountability
- Access to high quality staff
- On-time performance within budget constraints

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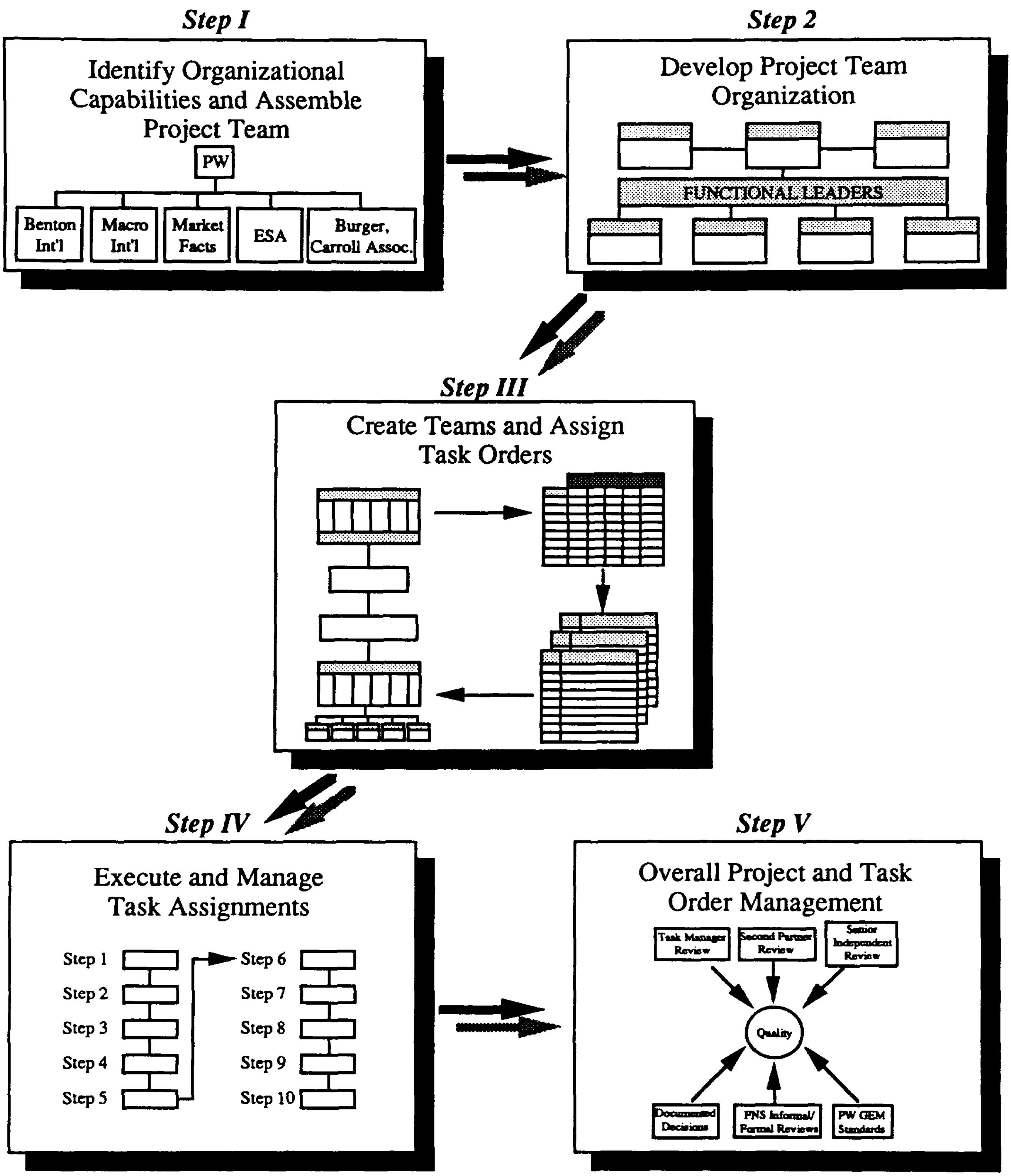
Overview Of Key Steps In Creating Teams To Staff Task Orders



The discussion is organized into the following subsections:

- Selection and capabilities of project team organizations
- Project team organization
- Approach to assigning task orders and to a task order request
- Application of established standards for management, documentation, and control

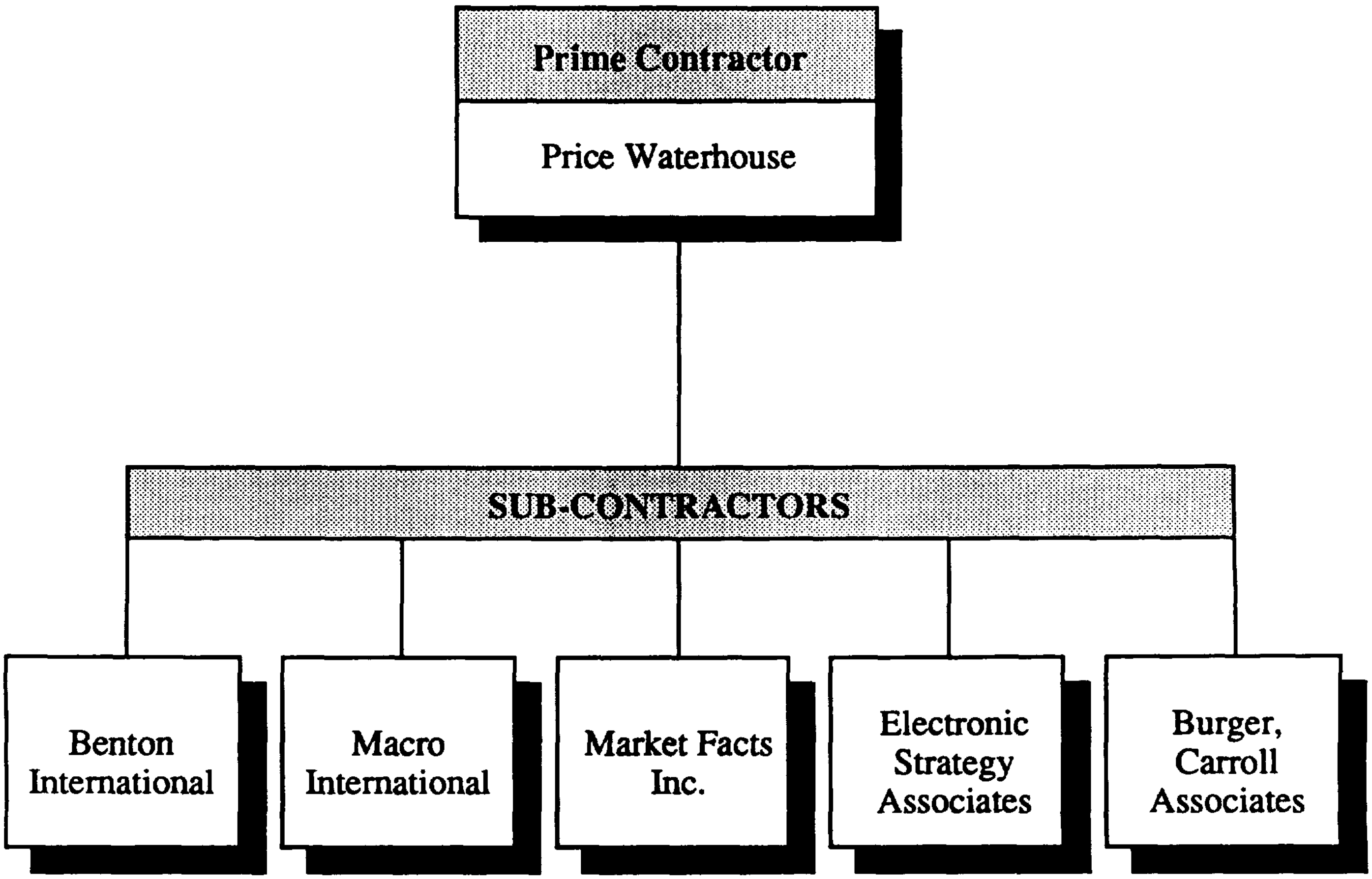
1. Selection and Capabilities of Project Team Organizations

FNS recognizes that performance under this contract will require a project team with depth and breadth of professional resources in a wide range of areas and available on an as needed basis. In this regard, the RFP encourages teaming arrangements and explicitly states:

- Since the range of staff expertise required under this contract is very broad and some needs are intermittent, it is anticipated that no single contractor will have all required expertise in-house. Therefore, proposals relying on extensive subcontracting are encouraged.
- The successful offeror will demonstrate their ability to initiate, maintain, and utilize subcontracts with other technical, consulting, and research firms.
- To foster the best mix of skills for the government as well as the availability of highly specialized knowledge, FNS does not oppose situations in which a firm with specialized knowledge or capabilities bid as a subcontractor by a competing offeror.

While we found reluctance on the part of many firms to participate on more than one team (a strategy which we had initially pursued), the **Price Waterhouse Team** responds explicitly to the other above referenced notes on the formation of project teams. The **Price Waterhouse Team** consists of Price Waterhouse as the Prime Contractor and five subcontractors as summarized in Exhibit II-2. Price Waterhouse, in bringing these diverse firms together for the purposes of this proposal, demonstrates from the start our ability initiate subcontracting

Project Team Organizations



arrangements for the purposes of this contract. A copy of our standard form teaming agreement, which will be tailored to each of the subcontractors upon contract award is included as Appendix A. As the Prime Contractor, Price Waterhouse will serve as the single point of contact between FNS and our subcontractors and will be contractually responsible for all project deliverables and products.

Price Waterhouse has vast experience in managing both multiple assignment contracts and multiple subcontractors and significant financial and program management experience as well as extensive data collection and research capabilities. The other members of the **Price Waterhouse Team** have specific experience relevant to the needs of the proposed engagement. Benton International (BI) bring to the project team extensive experience in EFT/EBT technologies and their application in both the private and, more recently, public sector settings. Macro International (Macro) brings to the project team both research design and related skills and extensive experience in training and technical assistance. Market Facts and Nathan Young, a researcher at the Urban Institute add to the project team's research and data collection capabilities and bring specific knowledge of the Food Stamp Program, knowledge of EBT/EFT issues, and research in food stamp cashout issues. Electronic Strategy Associates (ESA) adds to the project team technical capabilities, "hands on" knowledge and experience with EBT/EFT as it relates to food stamps and the applications of these technologies in a number of the demonstrations sponsored by FNS. Finally, BCA, Inc. adds to the project teams understanding of EFT/EBT automation issues at the state level experience principally in relation to the WIC program but also as WIC relates to food stamps. This combination of firms and consultants offers to FNS the appropriate mix of resources to address the full range of food assistance implementation and evaluation issues through this quick turnaround task order contract.

The remainder of this subsection provides further detail on the corporate capabilities of our project team organizations. These capabilities enhance the **Price Waterhouse Team's** ability to create teams to staff task orders.

a. Price Waterhouse

Price Waterhouse is an internationally recognized partnership of more than 45,000 professionals devoted to excellence in accounting, auditing, tax, and management consulting services. Formed in London in 1849, Price Waterhouse has expanded into a worldwide network with more than 400 offices located in over 100 countries. Our U.S. firm has offices in 115 locations across the country and a professional staff of over 12,500. Exhibit II-3 defines the network of current Price Waterhouse offices in the U.S. As prime contractor, Price Waterhouse is uniquely positioned to bring firm-wide resources to bear on behalf of FNS. While responsibility for the performance of this contract, and key staffing assignments, will come from our Washington-based Office of Government Services, Price Waterhouse frequently draws together experts from other offices on an as-needed basis.

Firm-wide resources, particularly in the banking and financial services arena, are extensive, given the historic nature of our work and clients. To date, the firm's Financial Services Industry group are dedicated to helping financial services institutions deal successfully with a changing regulatory environment and profitability concerns. This group assists these institutions in their efforts to adapt to market realities, and provide practical solutions to organizational structure, strategic planning, product development, and information technology. Within the arena of information technology services, Price Waterhouse provides systems planning, design and development services, data security reviews, computer information systems audit services, and emerging technologies such as image processing systems.

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Price Waterhouse Office Locations

Exhibit II-3

Established in 1973, and consisting of over 500 professionals, our Office of Government Services (OGS) is now the largest government consulting practice, with the greatest breadth and depth of activities covered, of any public accounting firm so dedicated. OGS provides specialized assistance to Federal, state, and local government entities in functional areas especially relevant to this solicitation. In particular, for this contract Price Waterhouse has identified and selected highly skilled management and staff from the Management Science and Economics (MS&E) and Advanced Information Technology (AIT) Special Practice Units within OGS.

MS&E includes more than 90 professionals with a broad range of experience in program evaluation; policy analysis; management and organizational analysis; economic financial and statistical analysis including cost-benefit and cost-validation; and survey and evaluation design and implementation. AIT is a leader in planning, design, and development of computer information systems for government agencies. AIT provides services covering: system reviews and strategic information systems planning; information requirements definition and analysis; package evaluation and selection (including the development of Requests for Proposals (RFPs) to software package vendors); design, development, and installation of integrated systems; training and procedures; and post-implementation and security reviews.

Through the diverse and extensive activities of OGS, Price Waterhouse brings not only demonstrated capacity in functional areas pertinent to this contract, but also extensive experience delivering top quality consulting services while managing multiple sub-contractor agreements and multiple task orders. Specific examples of corporate experience of the **Price Waterhouse Team** relative to this solicitation can be found in sub-section II.C. In summary, our national presence and reputation for excellence, coupled with the capacity to devote unparalled resources in key functional and administrative areas position Price Waterhouse as prime contractor to lead the **Price Waterhouse Team** in meeting the needs of FNS.

b. Benton International

Founded in 1978, Benton International is a leading management consulting, business research, and systems integration organization serving private corporations and public agencies in the USA, Canada, Great Britain, Mexico, South America and Japan. The focus of Benton International's work falls on developments in the payments system; and more generally, on technical and policy issues concerning the integration of advanced telecommunications and computer systems for cost-effective product delivery, and on the implementation of such systems on behalf of its clients.

Benton International is known within its client base as a consulting company with a heavy systems integration orientation, with the ability to address payment systems projects from concept through the system implementation phase. Benton International's client base spans financial institutions; shared ATM/POS and credit/charge card networks; retailers; suppliers of EFT and transaction processing systems and services; government; and, industry/multi-industry associations. In addition to having served many of the largest consumer/retail banking organizations in America, Benton International brings to FNS an extensive debit network client base including Star, Interlink, Honor, MAC, MOST/Internet, NYCE, Yankee 24, PULSE, Shazam, and CIRRUS. Further, Benton International has worked closely with food retailers (currently serving major supermarket chains in New England and California), electronic equipment and telecommunications suppliers (including AT&T, IBM, Unisys, and NCR), application software and system vendors (Deluxe Data Systems, LeRoux, Pitts & Associates, Inc., and Shared Financial Systems are a few), and data processing services (ADP, Citicorp, EDS, and U.S. Bancorp). This immersion with the major players in the EFT/EBT arena has brought fluency in the critical technological and logistical issues driving the design, development and implementation of EFT/EBT.

Benton International's functional expertise similarly broadly spans many areas relating to the development of Electronic Payment Systems (EPS) and EFT in the U.S. From strategic forecasting and planning; through market analysis, systems and software evaluation and architectural development; to network design, implementation and management, Benton International brings rich knowledge and expertise **Price Waterhouse Team.** Benton International consultants are seasoned, professional managers who know financial service business first hand; many having successfully run multi-million (sometimes multi-billion) dollar operations. As sub-contractor, Benton International will provide FNS the thorough, current, and objective knowledge of the complex and changing EFT/EBT environment that is essential to the successful completion of this contract.

c. Macro International

Macro International Inc. has been a leader in research, management consulting and training for over 25 years. Founded in 1965, Macro has a staff of 300, annual revenues in excess of $30 million, and offices in Silver Spring, Md., Burlington, Vt., Atlanta, Ga., and Columbia, Md. The company has recieved recognition for its superior results in Instructional Products Development from the Nebraska Interactive Video Awards and on nationwide TV.

The coveted Nebraska Videodisc Group's Interactive Media Award of Merit was confered on Macro for it's "Working With Math" videodisc in March, 1991. In July, a network TV segment was aired nationwide featuring "Talk and Draw," a speech-recognition drawing program developed by Macro. The Talk and Draw segment appeared on World News Tonight, a primetime news broadcast.

Macro offers a solid core of instructional systems designers, career development and transitions training experience and expertise in emerging instructional techniques for computer-

based interactive videodisc and video training. From analysis of needs, jobs and tasks to design, development and delivery of training and training materials, Macro has proven expertise in Alternative Instructional Methods including interactive videodisc instruction.

Training is one of Macro's strengths and is a major business parctice area in the firm's Health and Human Services Division and in the Institute for Resource Development, a wholly owned subsidiary based in Columbia, Md.

In addition, Macro will support the **Price Waterhouse Team** in research, evaluation and policy on the technologies to be used, and effective methods of implementation and training to put those technologies in place.

d. Market Facts, Inc.

Market Facts is one of the largest full-service survey research and consulting companies in North America. Founded in 1946, the company now conducts over 2,000 projects annually for a diverse public and private sector clientele. Market Facts is known for its rigorous collection of high-quality data and for expert application of quantitative methods in sample design and statistical analysis of data. Headquartered in Chicago, Market Facts has major data collection and data processing facilities in Oak Park, Evanston, and Aurora, Illinois.

Market Facts' Public Sector Research Group (PSRG) will furnish expertise to the **Price Waterhouse Team** with responsibility for design and execution of primary data collections. The group is a specialized component of Market Facts, developed to apply the methods of social science and survey research to issues of public policy. The staff of the PSRG is composed of social scientists who are experienced in all phases of the design, management, and analysis of survey research. The Professional staff of the PSRG have advanced degrees and experience in

such fields as statistics, survey research, social psychology, political science, consumer research, business, marketing, and mathematical psychology. They have extensive experience in studies of attitudes, opinions, and behavior of the general public as well as special groups such as food stamp recipients and other low-income populations. The project director of the Market Facts team, Dr. Leigh Seaver, and other senior professional staff, are located in Washington, D.C., and will be able to maintain close working relationships with Price Waterhouse and FNS through the duration of the contract.

Market Facts brings to the **Price Waterhouse Team** the essential capacity to efficiently and effectively conduct research planning, execution, and analysis from the smallest to largest scale. Market Facts is experienced in study, survey, and sample design; personal, telephone, mail interviewing; direct observations and focus groups; data processing, coding, and tabulations; and research analysis including statistical reports, multivariate analysis, and analytic reports. Market Facts pioneered the use of Computer-Assisted Telephone Interviews (CATI), and maintains the most capable CATI system current technology supports including 144 CATI interviewing stations working 14 hours a day, 7 days a week. Further, the firm is experienced in managing additional survey resources which include: a network of field agencies with interviewers in 360 areas in the U.S.; a mail center and in-house printing facilities to speed the processing of large mailings; capacity for in-depth individual interviews and focus groups virtually anywhere in the country. Market Facts data collection centers generate millions of questionnaires each year that are processed in-house and tabulated at the company's own computing center. The computing center contains an IBM mainframe computer and all necessary ancillary equipment. Further, the company has developed specialized software for highly efficient tabulation of survey data.

Market Facts currently serves 60 of the top 100 companies in the FORTUNE 500; has worked with many major national associations; and has conducted surveys for eleven federal

departments including; Department of Agriculture, Health and Human Services, and the Treasury. The firm's flexibility, depth of resources, and history of providing top quality research when needed on a quick turn-around basis makes Market Facts a team member with which FNS can confidently work in meeting its Food Stamp Program research needs as they arise under this contract.

e. Electronic Strategies Associates

Electronic Strategy Associates (ESA) is an association of Electronic Funds Transfer (EFT), Automated Teller Machine (ATM), Automated Clearing House (ACH), Point-of-Sale (POS), and financial transaction card Professionals. ESA provides consultation and implementations services to existing and potential EFT/EBT providers. ESA brings to the **Price Waterhouse Team** a wealth of pertinent knowledge and "hands-on" experience with POS and ATM networks, electronic technology, and EBT systems.

ESA's involvement in major government projects and contracts has lead to experience with on and off-line systems design, function, and evaluation. For example, ESA was selected by the Food and Nutrition Service as Prime Contractor on The Feasibility of Off-line System Applications to Food Stamp Program Functions; a project that considered not only off-line approaches such as Smart Cards, but also the linkages to existing ATM/POS networks. ESA also brings significant familiarity and experience with several FNS EBT demonstration projects; specifically Reading, PA, and Ramsey County, MN. For Reading, ESA both served on the Experts Panel for evaluation and furnished personnel for the software acceptance test as the Reading program expanded. For Ramsey County, ESA provided advice and counsel to the project and worked with the associated bank and retailers. Their performance on this contract lead Mr. Truman Porter of the Midway National Bank to comment, "Their (Paul Coenen and

ESA) knowledge of EBT, technology, POS and merchants, pricing, and the interplay of all the factors anticipated the problems and was of tremendous value."

Beyond these experiences, ESA has performed numerous tasks in functional areas defining EFT/EBT including: terminal evaluations, programming, and purchase; computer center specifications, design, and architecture to handle both on and off-line functions; consulting services to the retail food industry on EFT/POS issues. In addition, ESA helped develop and manage the first state-wide EFT network in the nation, TYME in Wisconsin, as well as the largest regional EFT network, PULSE in the Southwest. PULSE later became the model for networks like HONOR, AVAIL, and others. ESA and Paul Coenen have provided consulting services to all five of the major EFT/EBT software providers: MTech/EDS, ACI, Deluxe Data, Shared Financial, and LeRoux, Pitts. Major EFT networks including STAR, CIRRUS, Instant Cash, Award, Money Station, Cash Flow, MPact, and Instabank have sought the consulting services of ESA. Finally, service suppliers like EDS, BUYPASS the System, BellSouth and NYNEX as well as terminal suppliers including Diebold, Fujitsu, Lexicon, Datatrol, and DMC/Norand have been clients of ESA's consulting assistance in recent years.

Bringing rich and diverse experience in EFT/EBT applications at the project level, Electronic Strategy Associates will play an integral role in the **Price Waterhouse Team**. ESA's working knowledge of EBT from the technical and program perspectives complement that of other team members and contribute to the team's ability to provide extensive and comprehensive assistance to FNS across a wide domain of technical and program areas.

f. Burger, Carroll Associates

Burger, Carroll Associates (BCA) is a New Mexico-based partnership providing management and information system consultation services to the public sector health and

nutrition program community. BCA principals and associates have more than fifty (50) years of combined experience in Food and Nutrition Service programs and are recognized for their work in both management systems and nutrition services. The firm has a corporate commitment to contribute to the quality and integrity of program operations and services. BCA's specialty areas include quality assurance and a well-grounded understanding of the service delivery environment.

BCA management support services include: retail vendor monitoring; caseload management; budget planning and forecasting; management evaluations; and staff training. In addition, BCA information systems services provided include: feasibility/cost benefit; food delivery alternatives; procurement support; system design; training and documentation; evaluation and EDP audit; quality assurance; and system and network security. BCA has a rich history of providing nutrition services related assistance, particularly at the state level, in areas including: lactation-support strategies; education program design; clinic evaluation; staff/supervisory training; statistical analysis; integration/coordination; and patient/workflow analysis. Beyond state level work, BCA has consulted for major public and private sector entities including: I.B.M.; Bull HN Information Systems; Advanced System Design, Inc.; and the U.S. Department of Agriculture.

BCA brings to the **Price Waterhouse Team** critical experience in the design, development, and implementation of public health and nutrition-related information systems. In several cases, BCA has provided data system procurement assistance and on-going quality assurance support for state WIC programs. In another case, BCA designed a multi-program integrated statewide information system network which included WIC, MCH, Immunization and Family Planning. In addition, BCA projects have often included the development and preparation of system-relevant policy and procedure manuals and documentation for use by state level clients.

In short, BCA's extensive experience in management and information systems issues relating to public health and nutrition programs gives it a broad and valuable perspective, and strong expertise as these areas relate to the Food Stamp Program. BCA is positioned to address the many critical information systems issues that cut across multiple health and nutrition programs. As states wrestle with the options surrounding Food Stamps EBT and integration with other assistance programs, they will inevitably require the assistance of firm with proven practical cross-cutting experience in these areas. BCA's membership in the **Price Waterhouse Team** indicates our willingness and commitment to meeting these and the many other developing needs of the states.

2. Proposed Organization

Exhibit II-4 presents our proposed project team organization for directing this task order contract. This organization consists of key positions including the Management Team, Quality Assurance Manager, an Executive Committee, and Functional Leaders in the areas of Project/Resource Management; Research Design, Analysis Implementation and Reporting; EFT/EBT Technologies; and Training and Technical Assistance. As described below, members of the Executive Committee are also Functional Leaders. This proposed organization is intended to provide FNS with a single point of contact for all contract management matters, while allowing for day-to-day interaction between FNS personnel and the project team Functional Leaders. Our organization also provides a mechanism for assigning the appropriate functional expertise to each task order request. Finally, the organization structure has a built-in mechanism for assuring project quality control. The following describes our proposed organization and explains how this organization will help enhance the project team's ability to provide quick response and quality work for task order assignments.

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Exhibit II-4

Food Assistance Delivery Implementation Project Team Organization

Executive Committee
Tom Colberg (PW)
John Benton (BI)
JoAnn Kuchak (MI)
Leigh Seaver (MF)
Paul Coenen (ESA)
Arthur Burger (BCA)

Management Team
John Korbel (PW)
Ran Advani (PW)
Joseph Casey (PW)

Quality Assurance Manager
Fredric Laughlin (PW)

FUNCTIONAL LEADERS

Project Resource Management
Joseph Casey (PW)

Research Design, Implementation, Analysis and Reporting
Glenn Galfond (PW)
Leigh Seaver (MF)

EFT/EBT Technologies and Payment Methods
Tom Colberg (PW)
John Benton (BI)
Paul Coenen (ESA)

Training/Technical Assistance
JoAnn Kuchak (MI)

Staff Expertise by Topic Area

- Project Management (Especially in regard to rapid implementation of projects, rapid completion of project tasks, large dollar procurements, and management of simultaneous projects)
- Research design, methodology, and sampling
- Data collection and data management, including abstraction of data from records; gathering of data from individuals through mail, telephonic, and in person techniques; collection of nutritional data; and merging/processing of computerized data files
- Quantitative data analysis methods and techniques
- Qualitative analysis methods and techniques
- Quantitative and qualitative approaches to cost analysis including both cost benefit and cost-effectiveness studies
- Expertise in point-of-sale applications and EFT technology and practice, especially in the EBT area
- Expertise in financial institution practices and procedures
- Expertise in retail food industry practices and procedures, especially in connection with food stamp redemptions WIC vouchers, and/or the installation and use of POS/debit card technologies
- Expertise in training, instructional design, and preparation of systems documentation and user manuals
- Technical report writing and editing

PW= Price Waterhouse
BI= Benton International
MI= Macro International, Inc.
MF= Market Facts, Inc.
ESA= Electronic Strategy Assoc., Inc.
BCA= Burger, Carroll Associates

As indicated in Exhibit II-4, the project will be headed by a our Co-Project Managers, Dr. John Korbel, who will serve as our single point of contact for the receipt of all task order requests from FNS and will be responsible for all aspects of performance under this contract and Mr. Ran Advani, who will work with Dr. Korbel in providing overall technical project management. As Price Waterhouse Partners, both Dr. Korbel and Mr. Advani are authorized to commit the resources of the firm, and thus will be able to provide whatever is necessary to support FNS. Dr. Korbel and Mr. Advani will work closely with the Deputy Project Manager, Mr. Joseph Casey, a Price Waterhouse Manager, in directing the **Price Waterhouse Team** efforts. Together, they provide the "full time" project management this contract will inevitably require.

Our management approach includes a Quality Assurance Manager, Dr. Fredric Laughlin, a Partner with Price Waterhouse, who will serve as a Second Partner on this engagement. Dr. Laughlin will be responsible for monitoring quality across all tasks and for assuring utilization of all management control and reporting procedures. As part of Price Waterhouse's routine quality control procedures, Dr. Laughlin will serve as the Second Partner on this engagement and review all work products according to our internal standards for work product development and project documentation. As a Second Partner, Dr. Laughlin will also have the authority to commit Price Waterhouse resources to assignments under this contract.

Working closely with Dr. Korbel and Mr. Casey will be an Executive Committee consisting of Mr. Thomas Colberg (PW), Mr. Jack Benton (BI), Ms. JoAnn Kuchak (Macro), Dr. Leigh Seaver (Market Facts), Mr. Paul Coenen (ESA), and Mr. Arthur Burger (BCA). The Executive Committee will serve to assist our Project Management in all substantive decisions regarding direction and goals of the **Price Waterhouse Team**. Together, Dr. Korbel, Mr. Advani and Mr. Casey (with the concurrence of the Executive Committee) will negotiate all task order requests with FNS contract and technical staff and will assume direct responsibility for

assignment of Task Order Managers and staff. They will remain sufficiently involved in all task order assignments to the extent necessary to ensure that high quality services are provided on time and within budget.

As noted above, we have identified Functional Leaders in five areas who will facilitate our ability to respond quickly to FNS task order requests. These Functional Leaders are shown in Exhibit II-4 and are senior professionals who, in most cases, direct the **Price Waterhouse Team's** resources in their respective areas. They will either serve as Task Order Managers or assist in identifying the **Price Waterhouse Team's** most appropriate resources for managing and staffing individual assignments.

Overall project management will require careful and timely progress reporting on individual assignments (discussed in greater detail below). The Project Manager will provide the COR, on a monthly basis, written progress reports which will identify all assignments currently in progress, progress to date in terms of hours and dollars, cumulative hours and dollars by assignment and for the overall contract, anticipated problems and solutions, and anticipated activities during the coming period. Similar written reports will be prepared for each task order assignment by the Task Manager for review by FNS. This commitment to detailed and timely progress reporting will insure timely responses to foreseen and unforeseen challenges during this contract and the individual assignments such that there are no surprises.

In summary, our proposed Management Team provides FNS with a single point of contact on all matters pertaining to this contract, Dr. John Korbel and Mr. Ran Advani, our Co-Project Managers, and Mr. Joseph Casey, our Deputy Project Manager. Our management plan also designates a Quality Assurance Manager to provide appropriate review and back up to the Management Team. At the same time, our management approach to task assignment and individual tasks, as describe in the next section, allows for effective assignment of individual

task orders and day-to-day interaction between FNS and our individual Task Managers. Our proposed approach also provides an efficient mechanism for identifying and assigning key staff for rapid response to task order requests. Finally, our approach provides for an Executive Committee which will be involved in the commitment of resources and all substantive project decisions and will review the quality of all assignments completed by the **Price Waterhouse Team**.

3. Approach to Assigning Tasks and a Task Order Request

A general overview of our approach to staffing and assigning particular task order requests is provided in Exhibit II-5. Upon receiving a task order request and assessing the general service area requirement, our Project Management (Dr. Korbel, Mr. Advani and Mr. Casey) and Executive Committee will identify the appropriate Functional Leader(s) to consult regarding potential staffing requirements and availability. This management group will meet with FNS's contracting officer to further clarify assignment requirements and the staff skills necessary for addressing that assignment. Subsequently, a Task Order (Task) Manager will be identified who will assist in the development of a work plan and further clarify staffing requirements. This Task Manager will communicate directly with FNS's contracting officer to confirm the scope of the assignment and the resources required. The Task Manager will be aware of the skills and experience levels of staff members as well as of their availability. It is our expectation and experience that these initial staffing decisions for a new task order request will usually be made the same day the request is received. In this way, the identified Task Manager and project staff can all play lead roles in the preparation of the assignment work plan and work directly with FNS's Task Monitor.

Once a task order is in place, the Task Manager will assume responsibility for all elements of day-to-day project performance. The Task Manager will make staff assignments,

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Organization for Managing the Task Order Contract: Matching Staff Resources with Task Order Skill Requirements

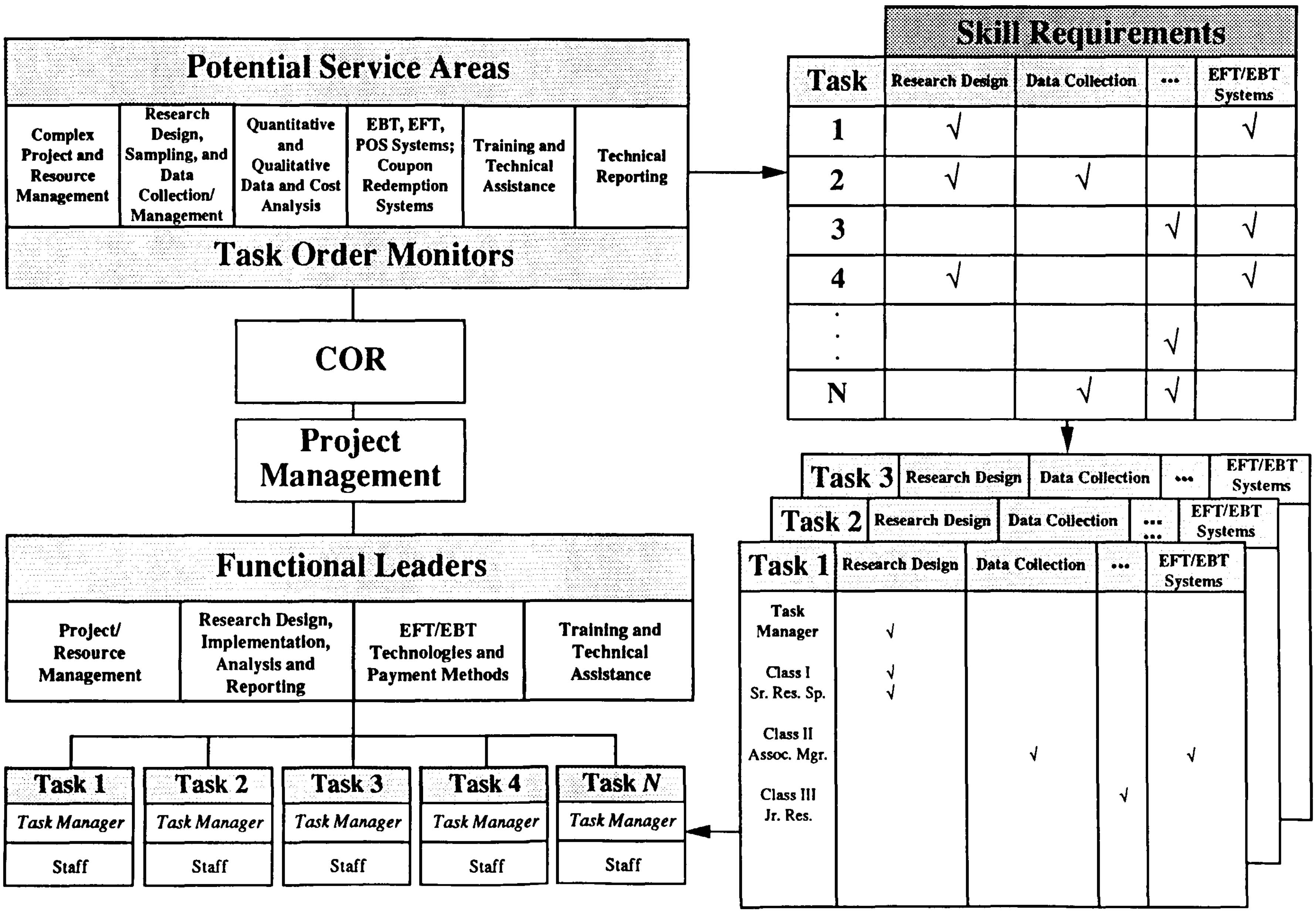

Exhibit II-5

schedule production, review, and delivery of products, and coordinate all activities with the FNS Task Monitor. As noted above and discussed in more detail below, Dr. Korbel, Mr. Advani and Mr. Casey will have oversight responsibility on all task orders. In addition to reviewing periodic progress reports, Dr. Korbel, Mr. Advani, and Mr. Casey will participate in weekly internal status briefings, and will review key decisions regarding separate task order schedules, resources, and products. In addition, they will be able to obtain additional resources if needed to address any problems or unforeseen requirements.

This section further details our approach to identifying skill requirements, making task order assignments, and responding to task order requests. On previous task order type engagements, Price Waterhouse, as the Prime Contractor, has demonstrated the capability to respond rapidly to assignments in a wide range of functional and technical areas and in directing the resources of Price Waterhouse as well as those of subcontractors and outside consultants. Exhibit II-6 summarizes our experience in providing resources for large multiple assignment contracts. Our successes on these contracts and many other similar engagements are attributable to the following key elements in our approach as they are applied to individual task order assignments:

- Systematic approach to task order requests
- Clear definition of scope and requirements
- Careful attention to the initial planning process
- Commitment of senior personnel to the assignment
- Availability of the requisite personnel resources
- Monitoring and control during task order execution
- Maintaining close working relationships with FNS

Each of the areas is discussed below.

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Summary of Price Waterhouse Project Team Experience with Multi-Assignment Contracts

Task Order Contract	Number of Task Orders	Total Value of Tasks ($ million)	Number of Personnel
Housing and Urban Development	5	$1.2	40-50
Department of State	30	$34.0	60-80
Internal Revenue Service	9	$1.5	20-30
Postal Service	37	$2.8	50-60
Bureau of Engraving and Printing	130	$4.6	45-50
Energy Information Administration	15	$1.0	12
Urban Mass Transit Administration	8	$2.2	15-20
Veterans Administration	15	$4.0	35

Exhibit II-6

a. Systematic Approach to Task Order Requests

Price Waterhouse has extensive experience in responding in a timely manner under task order contracts. Our experience has resulted in a ten-step methodology for planning, scheduling, and implementing task order activities. Exhibit IV-7 describes the steps we will follow to ensure a timely response and a quality work product.

We are prepared to respond quickly to a FNS task order with a detailed proposal (work plan) containing an explicit description of the services required, the time frame within each task or subtask is to be completed, and an estimate of the kinds and level of skills needed (including costs). Each work plan will include a work breakdown, schedule, key milestones, decision points, costs, and products. Each plan will also include a description of the technical approach to be used and specific staffing data, such as the extent and level of effort for each staff member. This detail will enable FNS to review and evaluate our work plan shortly after issuance.

Our approach encompasses a number of key points:

- Immediately following initial discussions with the FNS Task Monitor, we will prepare a written proposal to the task order request.
- We will assign the appropriate Task Manager to prepare the proposal and direct the task order. The Task Team will have the full range of expertise necessary to do the job.
- We will use status reporting, which will identify the current status of work steps in terms of planned, actual, and predicated resources utilization, and start and end dates. Any problems or delays will be identified in writing to FNS.
- We will use planning and quality control tools that facilitate timely and accurate plans and comparisons of planned-to-actual work performance and permit management to evaluate the quality of work being performed.

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Work Steps for Food and Nutrition Service Task Order Contract

Work Steps	Work Description	Comments on Work Steps
Step 1:	FNS provides task order to Project Manager/Deputy	• FNS prepares a statement of work identifying the problem, providing background information
Step 2:	Management Team and Task Manager meet and/or discuss with FNS Headquarters/ Region and State to review task order	• Purpose of meeting/discussion is to clarify scope and identify resource requirements • Incorporate further classification in subsequent written proposal
Step 3:	PW team conducts internal quality control review of proposal/work plan (task order team reviews the proposal as required)	• Project Manager/Deputy will review the proposal prior to submission to HHS to ensure that the approach is optimal, the work steps are appropriate, resources are allocated efficiently, etc. • Task Manager will suggest enhancements or changes as appropriate • Project Manager/Deputy will revise the proposal as required
Step 4:	PW Team delivers the proposal to FNS for review and approval	• The team will deliver the proposal to FNS
Step 5:	FNS formally assigns the task order to the PW Team	• FNS will review and approve the work plan, dates, labor and costs estimates, etc.

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Work Steps for Food and Nutrition Service Task Order Contract

Work Steps	Work Description	Comments on Work Steps
Step 6 (Optional):	PW Team reviews the workplan with FNS	• PW Team will revise the proposal as required if both parties modify estimates, scope of work, etc.
Step 7:	Task Manager and team perform work, report progress to the Project Manager/Deputy and FNS	• Task Manager/Team will perform work in conformance with approved work plan, reporting at least weekly to the Project Manager/Deputy • Project Manager/Deputy and Task Manager will report project progress to FNS
Step 8:	Task order staff meet regularly with FNS Project Officer and FNS working group members	• Provides FNS with access to project, ensures fit to FNS expectations, permits PW Team to react to changes and comments with FNS
Step 9:	PW Team presents draft results to FNS	• PW Team will present draft task order results to FNS for review and submission
Step 10:	PW Team prepares final product and delivers to FNS	• PW Team will analyze FNS's comments and prepare the final work product for delivery to FNS

Further detail regarding elements of this approach are presented below.

b. Clear Definition of Scope and Requirements

A critical aspect of approaching task order assignments is to secure a clear definition of the scope of work (Exhibit II-7, Steps 1-2). Oftentimes, the initial request may not fully define the scope of work desired. Meetings may be required during the planning period to discuss the intended scope and direction of the assignment. In cases where the task order is state specific, meetings with the relevant states may be necessary to further clarify task order requirements. In these meetings, the exact nature of the assignment, staff/skill requirements, and the required deliverables will be identified and discussed. Subsequent to the clarification meeting(s), the scope of work and the required deliverables will be explained and further clarified in written project plans.

c. Initial Planning Process

Effective work planning requires explicit attention to assessing FNS needs and developing tasks, schedules, budgets, workflow, manpower utilization, and deliverables that are responsive to those needs (Exhibit II-7, Steps 3-6). Preparation of the work plan requires:

- Definition of the **work product(s) to be produced**, the presentation of results to FNS (e.g., through a report or briefing), and the format for the deliverables

(e.g., outline of the report with shell tables to summarize how the results will be displayed)

- Identification of the **methods to be used** to develop the work products, including the:
  - Information required to provide the necessary assistance
  - Any data sources to capture the required information (e.g., prior studies of the identified issue/problem)
  - Techniques to develop findings (e.g., interviews; surveys; reviews of internal and external documents, statistics, and studies; work distribution analyses)
  - Potential problem areas
  - Participation to be provided by community-level and FNS
  - Quality control procedures employed to anticipate problems (e.g., gaps in required data); ensure that each conclusion and recommendation is supported by findings and evidence; and review the range of alternatives considered
- Identification of the **specific work steps required** to produce the work product, the appropriate staff to be assigned to each work step and the project schedule (e.g., hours by person, elapsed time from the start to completion of the project).

d. Commitment of Senior Personnel

The **Price Waterhouse Team** is committed to providing FNS with the highest quality services (Exhibit II-7, Steps 2-3). To accomplish this, we have committed senior, experienced personnel from our respective firms and organizations to provide services in a task order environment and with direct experience in providing these services on similar efforts. This experience is essential for our capability to respond quickly to task order requests, to work with the states and localities and FNS to develop an understanding of the scope of proposed assignments, and to develop and execute task order work plans that produce the desired results within the specified budget and time constraints. The initial activities of scope definition and project planning can only be performed by those who have senior-level knowledge of the

functional areas from which resources will be drawn to respond to a task order requests. Additionally, the effort must be directed by a Project Manager who has previous experience servicing multiple assignment engagements, has the knowledge of available personnel resources, and has the authority to commit the requisite resources on short notice.

As noted earlier, Price Waterhouse is proposing Dr. John Korbel as the Project Manager for this engagement. His qualifications are presented in Section B below, and include having successfully managed large contracts for HHS, FNS, NASA, and the Department of Commerce. From these and other assignments, he has experience in managing the resources of subcontractors as part of an integrated project team. As a Price Waterhouse Partner, he has the authority to commit the requisite resources to the task order assignments and the knowledge of the vast Price Waterhouse resources available for assignment to each task order.

Dr. Korbel and Mr. Advani will be assisted by Mr. Joseph Casey (an expert in project and resource management) in Project Management, by Dr. Fredric Laughlin in the area of Quality Assurance, and by an Executive Committee consisting of Mr. Thomas Colberg, the Price Waterhouse Partner-in-Charge of the EDI Practice; Mr. John Benton an expert in EFT/EBT technologies and payment systems; Ms. JoAnn Kuchak, representing Macro's training and technical assistance resources; Dr. Leigh Seaver, specializing in research, design, and data collection with particular knowledge and experience in the Food Stamp Program; Mr. Paul Coenen, specializing in EFT/EBT strategies and implementation; and Mr. Art Burger, with state level automation expertise in relation to FNS programs. As noted earlier, the management team will draw upon our Functional leaders to assist them in developing an understanding of task order assignment scope, and to plan for performing the required assignments. The expertise of these senior functional specialists will enable the **Price Waterhouse Team** to quickly understand the task order requirements and to develop a focused and cost effective plan for addressing the scope of work.

e. Availability of Personnel Resources

Our ability to respond quickly to task order requests can only be exercised within the constraints imposed by the availability of personnel resources. Thus, the **Price Waterhouse Team** is establishing a large pool of personnel resources in order to have the flexibility to respond to the wide range of task order requests. These personnel have the ability to define and plan responses to requests within a specific functional or service area, and to perform specific management, analytical and technical assignments. The available personnel have the knowledge necessary to grasp the problems or requirements addressed by the task order assignments, to provide the analytical talent necessary to structure an approach to accomplish the desired results, and to execute the assignments. Once an approach is structured, a wide range of analytical and technical talent is available to perform the work encompassed by the task order assignments. Exhibit II-8 (see section II.B) identifies the professional resources available by labor category and functional expertise.

f. Monitoring and Control During Task Order Execution

During the execution of the task order (Exhibit II-7, Steps 6-10), the Task Manager identified for each task order will be responsible for:

- Ensuring the timely completion of all tasks
- Assessing the project's rate of progress in light of pre-determined milestones and deadlines
- Evaluating the achievement of pre-determined goals and objectives
- Monitoring the hours and expenditures associated with each assignment in terms of the work plan and budget.

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The Task Manager will be responsible for regular progress reporting and communication with FNS. Both ongoing communication with FNS and our progress reports will define:

- Project progress to date. The progress of the project will be assessed in terms of overall timeframes and achievements. The status of project deliverables will also be evaluated. Schedule exceptions identifying activities that are ahead of or behind schedule will be defined with corrective action specified as needed.
- Needed guidance and/or assistance from FNS
- Problems in logistics or execution

The above description of our approach to project management has focused primarily on the technical aspects of the engagement. Price Waterhouse, as the Prime Contractor, will have the full responsibility for the financial aspects of the engagement. Accordingly, as progress billings are prepared each month, Dr. Korbel and Mr. Casey together with Task Manager(s), will evaluate the financial progress against the technical progress of the assignment(s) to identify inconsistencies. Inconsistencies are analyzed to identify causal relationships (e.g., staff mix, delay, scope problems) and to serve as a basis of discussion with the COR and other relevant FNS staff. In this way, both the technical and financial performance are reviewed monthly with the client.

As part of our management control and reporting, we will provide a project management system work plan and regular status reports showing actual progress against the work plan. The work plan will consist of a narrative description and a graphic summary of the schedule and financial elements of projects. The narrative will:

- Describe the planned schedule
- Identify each step in the work process required for completing the contract work and the period of time needed to accomplish each step, expressed in terms of calendar dates

- Identify the staff, financial, and other resources allocated to each assignment
- Provide the rationale for project organization, staff utilization, and other resources allocated to each task or activity

The graphic summary will show:

- Cumulative planned or budgeted costs of work scheduled for each reporting period over the life of the contract
- The planned project schedule that traces, by reporting period, the assignment start dates, periods of work in progress, and completion dates

The progress reports will consist of a narrative report and a graphic which depicts actual progress versus planned progress. The narrative report will:

- Provide a brief, factual summary description of technical progress made and costs incurred for each assignment during the reporting period
- Identify significant problems and their impacts, causes, proposed corrective actions, and the effect that such corrective actions will have on the accomplishment of contract objectives

The graphic will show:

- The schedule status or the degree of completion of tasks/activities by time intervals
- Cost status or the actual costs of work performed in accomplishing the tasks

It is important to note that Price Waterhouse, the Prime Contractor, is located in Washington, D.C. and will be easily accessible throughout the engagement for meetings on a moment's notice with FNS. Macro and Market Facts also have offices in the Washington area, further facilitating project team coordination and communication. Moreover, a number of the

team members is now or has in the recent past worked with the Office of Analysis and Evaluation (FNS) and are familiar with the style of reporting, management needs and policy context of this contract.

g. Maintaining Close Working Relationships with FNS

On a multiple assignment contract, it is essential that the **Price Waterhouse Team** maintain effective working relationships with FNS managers and staff. By so doing, we can respond to the Department's priorities and needs, and ensure that our assignments are properly focused and consistent with FNS direction. Many of the mechanisms to accomplish this type of working relationship have already been discussed, since they pertain to project organization or to quality control.

All Task Managers will be responsible for maintaining effective liaison with key FNS staff on each task order assignment. The Task Manager and all project staff will be encouraged to visit the FNS often and to maintain regular telephone contact. We will make every effort to collect and review relevant FNS documentation and to keep current on the Department's policies, guidance, and direction. It is our goal to expand on our current familiarity with FNS and expand our core staff with solid knowledge of FNS programs and management processes.

The Project Manager will also maintain close working relationships with the COR and other key managers in FNS. In addition to regular informal contact, we recommend that the **Price Waterhouse Team** conduct periodic formal briefings for these key officials on the status of contract activities.

Specific techniques we will use to keep FNS informed of our work and progress are as follows:

- Regular reporting of progress and status in accordance with contract requirements
- Informal and formal review of interim deliverables, outlines, draft and final deliverables
- Presentations accompanying assignment products
- Documentation of all significant decisions affecting assignments
- Documentation of interview results and confirmation of findings with individuals interviewed.

4. Application of Established Standards for Management, Documentation and Quality Control

The **Price Waterhouse Team** assigns a high priority to quality assurance activities. While quality assurance standards must be responsive to client needs and expectations with regard to the product, we also place great emphasis on independent assessments of performance and conformance to requirements. For many of the task order efforts, quality assurance measures will focus on up-front design and monitoring to assure compliance with prescribed procedures. For other activities, we will employ regularly scheduled independent verification and validation reviews in support of decisions to proceed with the effort.

For this contract, we propose to establish the following mechanisms to ensure that our products are of the highest quality and are fully responsive to FNS expectations:

- Multiple Levels of Review. The Task Manager is the first level of quality assurance review for all interim and final products. Our Task Managers are held to high standards and are expected to ensure excellent quality for all work performed by their assigned team members. In addition, we will provide senior independent review of all significant products, both key interim products and final deliverables. The Project Managers (Dr. Korbel, Mr. Advani, and Mr. Casey) will coordinate all independent review activities.
- Planning for Review and Quality Control Efforts. The **Price Waterhouse Team's** project plans specifically include all planned quality assurance activities,

specifying schedules and staffing requirements. As part of this planned review, Dr. Fred Laughlin will provide Second Partner review to assure uniform quality across our assignments and address Price Waterhouse internal review requirements. In this way, we ensure that time and funds are available to allow for adequate review.

- Written Documentation of Key Decisions. We provide written confirmation of all key decisions made regarding a task's direction, scope, schedule, or products. These written materials will be reviewed with FNS to ensure that we are in agreement on how to proceed. We consider this a part of our quality assurance activities since it ensures high quality products consistent with FNS expectations.
- Informal Reviews and Walk-Throughs with FNS. Informal walk-through and technical reviews are conducted on an as-needed basis with key FNS management and technical staff. This provides informal opportunities for the FNS to review our work and provide feedback.
- Provision of Outlines and Interim Deliverables. We make a practice of preparing and reviewing with the client detailed outlines and interim deliverables for all our products. In this way, we are sure that our products are properly organized and we provide an additional opportunity for client review. We propose to use this approach on this contract as desired by FNS Project Officers.

Price Waterhouse's standard procedures for project documentation facilitate our ability to monitor and maintain performance quality. Price Waterhouse, as a public accounting firm, has long maintained the discipline of detailed documentation of its work. This dedication to documentation has carried over into our consulting practice and is an integral part of each engagement. Our Guidelines For Engagement Management (GEM) are industry standard procedures for organizing project work papers. A summary of these procedures is contained in Appendix B. We employ GEM from the time we are notified of a possible engagement through completion of the job. The GEM manual contains over 100 pages of detailed procedures and forms for implementation of GEM. Although the degree of detail and supporting work papers is tailored to the size and the sensitivity of the engagement, GEM provides the standard framework for supporting our approach, findings, and conclusions for each job. We intend to employ not only our standard GEM procedures for engagement management, but also the

specific steps described above for the FNS contract. We are prepared to provide contract and task order management that is flexible, time-tested, and responsive to the needs of FNS.

B. Staff Capabilities and Skills

This section describes the **Price Waterhouse Team** capabilities and skills according the topic areas identified in the RFP. These topc areas include:

- Project management (Especially in regard to rapid implementation of projects, rapid completion of project tasks, large dollar procurements, and management of simultaneous projects)
- Research design, methodology, and sampling
- Data collection and data management, including abstraction of data from records; gathering of data from individuals through mail, telephonic, and in-person techniques; collection of nutritional data; and merging/processing of computerized data files
- Quantitative data analysis methods and techniques
- Qualitative analysis methods and techniques
- Quantitative and qualitative approaches to cost analysis including both costs benefit and cost-effectiveness studies
- Expertise in point-of-sale applications and EFT technology and practice, especially in the EBT area
- Expertise in financial institution practices and procedures
- Expertise in retail food industry practices and procedures, especially in connection with food stamp redemptions, WIC vouchers, and/or the installation and use of POS/debit card technologies
- Expertise in training, instructional design, and preparation of systems documentation and user manuals
- Technical report writing and editing

Members of our Project Team will provide FNS with an integrated team that is devoted to the objectives specified in the previous sections and in the RFP. The remainder of this section demonstrates the depth of Project Team members' experience.

The **Price Waterhouse Project Team** is fully committed to the objectives stated in this proposal. This section describes the relevant experiences and skills of each of our proposed personnel, organized by Class (seniority) as defined by the RFP. Relevant skills and experience of all Project Team members according to RFP topic areas are highlighted in Exhibit II-8. Detailed resumes of all Project Team members can be found in Appendix C.

1. Class I

The Price Waterhouse Team is organized to fully utilize the skills of each member and his/her organization, with Price Waterhouse acting as Prime Contractor and single point of contact between FNS and the Project Team. The Project Team Organization (Exhibit II-3 presented earlier) illustrates a our approach which provides a Management Team responsible for day to day responsibilities during the engagement, with an executive committee involved in all important substantive decisions. Executive committee members also serve to manage task order assignments in their respective areas of expertise. This section describes Class I personnel in the Project Team, and outlines their relevant experience qualifications according to the topic areas identified in the RFP.

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Summary of Project Team Experience

TEAM MEMBER Class I	Class Specialty	Project Management	Research Design Methodology	Data Collection and Management	Quantitative Data Analysis	Qualitative Data Analysis	Cost Analysis	POS, EFT, and EBT Expertise	Financial Institution Practice and Procedure	Retail Food Industry In Connection With Federal Aid and POS Technology	Training and Preparation of Systems Manuals	Technical Report Writing and Editing
Ran Advani (PW)	C	√	√	√	√		√		√	√	√	√
John Benton (BI)	A	√	√					√	√			
Wayne Boucher (BI)	C	√	√					√	√		√	√
John Brodercick (BI)	C	√	√				√		√			
Louis Buglioli (BI)	C	√					√	√	√			
Arthur Burger (BCA)	A	√	√	√	√	√					√	√
Elizabeth Byrom (MI)	B	√									√	
Julie Carroll (BCA)	C	√	√		√						√	
Joseph Casey (PW)	A	√	√	√	√					√	√	√
Sandra Chipungu (MI)	B	√	√	√	√	√						√

PW - Price Waterhouse
MF - Market Facts
BCA-Berger Connor and Associates
BI - Benton International
ESA- Electronic Strategies Associates
MI-Macro International
A-Management
B-Research
C-Technical

Summary of Project Team Experience

TEAM MEMBER Class I	Class Specialty	Project Management	Research Design Methodology	Data Collection and Management	Quantitative Data Analysis	Qualitative Data Analysis	Cost Analysis	POS, EFT, and EBT Expertise	Financial Institution Practice and Procedure	Retail Food Industry In Connection With Federal Aid and POS Technology	Training and Preparation of Systems Manuals	Technical Report Writing and Editing
Paul Coenan (ESA)	C	√	√	√				√	√		√	√
Thomas Colberg (PW)	A	√	√	√			√	√		√	√	√
Robert Cook (MI)	B	√	√	√	√	√	√					√
Donald DeLuca (PW)	B	√	√	√	√	√					√	√
Mike Errecart (MI)	A	√	√	√	√	√	√	√	√		√	√
Glenn Galfond (PW)	B	√	√	√	√	√	√					√
Carolyn Harris (MI)	C	√	√	√		√					√	√
John Hermann (MI)	B	√	√	√	√	√	√				√	√
Helen Hopps (MI)	B	√	√	√	√	√					√	√
Albert Irion (MI)	B	√	√	√			√				√	√

PW - Price Waterhouse
MF - Market Facts
BCA-Berger Connor and Associates
BI - Benton International
ESA- Electronic Strategies Associates
MI-Macro International
A-Management
B-Research
C-Technical

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Summary of Project Team Experience

TEAM MEMBER Class I	Class Specialty	Project Management	Research Design Methodology	Data Collection and Management	Quantitative Data Analysis	Qualitative Data Analysis	Cost Analysis	POS, EFT, and EBT Expertise	Financial Institution Practice and Procedure	Retail Food Industry In Connection With Federal Aid and POS Technology	Training and Preparation of Systems Manuals	Technical Report Writing and Editing
Clayton Jackson (BI)	C	√					√	√	√			
Noshir Kathok (BI)	C	√	√				√	√				
Clifford Kernohan (PW)	C	√					√			√		
John Korbel (PW)	A	√	√	√	√	√	√					√
JoAnn Kuchak (MI)	A	√	√	√	√	√	√		√	√	√	√
John Lathrop (MI)	B	√									√	
Fredric Laughlin (PW)	A	√	√	√	√	√	√				√	√
Judith Leibowitz (MI)	B	√	√	√	√	√					√	√
Michael Livesay (MI)	C	√	√	√	√	√						√
Suzanne Loux (MI)	B	√	√	√	√	√					√	√

PW - Price Waterhouse
MF - Market Facts
BCA-Berger Connor and Associates
BI - Benton International
ESA- Electronic Strategies Associates
MI-Macro International
A-Management
B-Research
C-Technical

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Summary of Project Team Experience

TEAM MEMBER Class I	Class Specialty	Project Management	Research Design Methodology	Data Collection and Management	Quantitative Data Analysis	Qualitative Data Analysis	Cost Analysis	POS, EFT, and EBT Expertise	Financial Institution Practice and Procedure	Retail Food Industry In Connection With Federal Aid and POS Technology	Training and Preparation of Systems Manuals	Technical Report Writing and Editing
Richard Mantovani (MI)	B	√	√	√	√		√				√	√
John McAllister (BI)	C	√	√				√	√	√			
Don Moehrke (BI)	C	√			√	√		√		√		√
Cynthia Morgan (MI)	B	√	√	√	√	√					√	√
Joseph Motter (MI)	B	√	√	√		√	√				√	√
Louise Peloquin (MI)	B		√			√					√	
George Reinhart (MI)	B	√	√	√	√	√	√				√	√
Pedro Saavedra (MI)	B	√	√	√	√		√				√	√
Leigh Seaver (MF)	B	√	√	√	√	√	√	√				√
Donal Semler (ESA)	C	√	√					√	√		√	√

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Summary of Project Team Experience

TEAM MEMBER Class I	Class Specialty	Project Management	Research Design Methodology	Data Collection and Management	Quantitative Data Analysis	Qualitative Data Analysis	Cost Analysis	POS, EFT, and EBT Expertise	Financial Institution Practice and Procedure	Retail Food Industry In Connection With Federal Aid and POS Technology	Training and Preparation of Systems Manuals	Technical Report Writing and Editing
Christine Snyder (PW)	C	√	√	√	√	√	√				√	√
Robert Stearns (BCA)	A	√	√	√	√	√					√	√
Stephen Stollmack (BCA)	B	√	√	√	√	√	√					√
Elizabeth Sundberg (MI)	B	√	√	√	√	√					√	√
Bert Tobin (BI)	C	√		√	√			√	√			
Linda Yates (BCA)	C	√	√	√	√	√					√	√

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Summary of Project Team Experience

TEAM MEMBER Class II	Class Specialty	Project Management	Research Design Methodology	Data Collection and Management	Quantitative Data Analysis	Qualitative Data Analysis	Cost Analysis	POS, EFT, and EBT Expertise	Financial Institution Practice and Procedure	Retail Food Industry In Connection With Federal Aid and POS Technology	Training and Preparation of Systems Manuals	Technical Report Writing and Editing
Felix Addo (PW)	C	√	√	√	√	√	√				√	√
John Appleman (PW)	C	√	√	√	√		√	√	√		√	√
Maria Armino (BI)	C	√	√					√	√	√	√	√
Karen Ball (PW)	C	√					√				√	
Karen Brown (BI)	C	√	√				√	√	√		√	√
Alexander Coburn (BI)	C	√						√	√		√	√
Rafael Delgado (MI)	C	√		√		√		√			√	√
Beverly Dietrich (PW)	C	√		√	√	√			√		√	√
Mary Garvin (PW)	C	√	√	√	√							√
Brian Goodhart (PW)	C	√	√	√	√	√	√				√	√

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Cornell Hills (PW)	C	√	√	√	√	√	√				√	√
Raymond Hipsher (PW)	C	√	√	√	√	√		√			√	√
George Hogeboom (PW)	C	√	√	√	√	√	√				√	√
James Howard (BI)	C	√		√		√		√	√			√
Helene Jennings (MI)	B	√	√	√	√	√	√				√	√
Jonathon Kate (BI)	C	√	√	√	√	√			√			√
Sue Lynn (MI)	C	√									√	
Donald Mathes (MI)	C	√	√	√	√	√	√	√	√			
Daniel McGoldrick (MF)	B	√	√	√	√	√		√				√
Phillip McLauchlin (PW)	C	√	√	√	√	√	√	√	√		√	√

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Paul Moo (PW)	C	√	√	√	√	√		√			√	√
Karen Roth (BI)	C	√		√	√	√	√	√	√			√
Carolyn Rutsch (MI)	C		√	√		√			√			
Janice Sawyer (MI)	C	√	√	√		√					√	√
Michael Schaver (BI)	C	√	√		√	√	√	√	√		√	√
William Schultz (PW)	B	√	√	√	√		√				√	√
Michael Strijek (BI)	C	√	√	√	√		√	√	√			√
Jim Thompson (PW)	C	√	√	√	√	√	√				√	√
Seth Twery (PW)	C	√		√	√	√		√	√		√	√
John Vidmar (MF)	B	√	√	√	√	√		√				√

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Barry Welch (BI)	C	√		√	√	√			√			√
Nicole Willenz (PW)	C	√	√	√	√	√	√	√	√	√	√	√

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Summary of Project Team Experience

TEAM MEMBER Class III	Class Specialty	Project Management	Research Design Methodology	Data Collection and Management	Quantitative Data Analysis	Qualitative Data Analysis	Cost Analysis	POS, EFT, and EBT Expertise	Financial Institution Practice and Procedure	Retail Food Industry In Connection With Federal Aid and POS Technology	Training and Preparation of Systems Manuals	Technical Report Writing and Editing
Ariel Ahart (MI)	B		√	√		√	√				√	√
Marianne Albanese (PW)	C	√	√	√	√	√					√	√
Rick Bacchus (BI)	C	√	√	√	√		√	√	√		√	√
Peter Contardo (BI)	C	√	√	√	√	√		√		√	√	√
Michael Corley (PW)	C	√			√			√			√	√
Michael Friedlander (BI)	C	√	√	√	√		√					√
Lisa Hammer (MI)	B	√	√	√	√						√	√
Marc Meltzer (PW)	C	√	√								√	√
David Owen (BI)	C								√		√	√
Robert Pells (MI)	C					√						

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Summary of Project Team Experience

TEAM MEMBER Class III	Class Specialty	Project Management	Research Design Methodology	Data Collection and Management	Quantitative Data Analysis	Qualitative Data Analysis	Cost Analysis	POS, EFT, and EBT Expertise	Financial Institution Practice and Procedure	Retail Food Industry In Connection With Federal Aid and POS Technology	Training and Preparation of Systems Manuals	Technical Report Writing and Editing
Elaine Robey (MI)	B		√	√		√					√	√
Patti Robinson (PW)	C	√	√	√	√	√		√			√	√
Leo Ryan (MI)	B		√		√						√	√
Sharon Stout (MI)	B		√	√	√	√					√	√
Stephen Terrell (MI)	C	√	√	√	√	√					√	√
Kathleen Wholey (MI)	B		√	√		√					√	√
Nathan Young (PW-C)	B		√	√	√	√	√					√

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Summary of Project Team Experience

TEAM MEMBER Class IV	Class Specialty	Project Management	Research Design Methodology	Data Collection and Management	Quantitative Data Analysis	Qualitative Data Analysis	Cost Analysis	POS, EFT, and EBT Expertise	Financial Institution Practice and Procedure	Retail Food Industry I n Connection With Federal Aid and POS Technology	Training and Preparation of Systems Manuals	Technical Report Writing and Editing
Alan Achterberg (BI)	B				√	√	√	√	√	√		√
Bruce Caswell (PW)	B		√	√	√	√						√
Kevin Confoy (PW)	B			√	√	√	√					
Katherine Flint (MI)	B	√		√	√	√					√	√
Janet Harris (MF)	C			√	√	√	√		√			√
Heidi Scanlon (PW)	C			√	√	√	√	√			√	√
Timothy Schranck (PW)	C	√		√	√	√	√		√		√	√

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Summary of Project Team Experience

TEAM MEMBER	Class Specialty	Project Management	Research Design Methodology	Data Collection and Management	Quantitative Data Analysis	Qualitative Data Analysis	Cost Analysis	POS, EFT, and EBT Expertise	Financial Institution Practice and Procedure	Retail Food Industry In Connection With Federal Aid and POS Technology	Training and Preparation of Systems Manuals	Technical Report Writing and Editing
Class V												
Hermine Theologus (MI)	Graphic Artist											
Julia Withers (MI)	Editor											
Class VI												
Juanita Bourguillon (MI)	Word Processor											
Linda McLaughlin (MI)	Word Processor											

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John J. Korbel (Co-Project Manager). Dr. John J. Korbel, a Partner with Price Waterhouse in the Management Science and Economics Special Practice Unit, is an economist with over 18 years of experience in the areas of public policy, research design and analysis, human services, policy evaluation and implementation assessment, economic analysis, and financial feasibility studies. Over the last 10 years with Price Waterhouse, Dr. Korbel has consulted with public and private sector clients addressing policy and analysis issues at all levels of government. Within the Management Science and Economics Unit, Dr. Korbel directs the Policy Research and Analysis group. Among his present assignments is to serve as Project Partner on our current engagement with FNS to evaluate food service management companies in the School Nutrition Program. Prior to joining Price Waterhouse, Dr. Korbel was a policy analyst with the Congressional Budget Office and was principal analyst responsible for welfare reform and a variety of income support and human services issues. Dr. Korbel holds a Ph.D. and M.A. in Economics from the University of Colorado and a B.A. from Williams College. Highlights of Dr. Korbel's experience by topic area are provided below.

JOHN J. KORBEL (CO-PROJECT MANAGER)	
Topic Area	Experience/Activities
Project Management	• Partner in Charge of Policy Research and Analysis group conducting numerous project assignments • Partner on quick response Task Order contracts for NOAA, NASA, and Department of Commerce • Partner on FNS food service management company evaluation • Project Director on national study of public and private social service programs for HHS
Research Design, Methodology, Sampling	• Application of microsimulation modeling and analysis to the evaluation of social programs • Surveys of customers regarding electric utility use • Surveys of the primary and secondary petroleum industry regarding inventory and storage capacity on a national basis • Design of pair wise sampling approach to FNS food service management companies • Application of numerous statistical and econometric methods to studies and research through graduate studies, teaching, and research and consulting studies

JOHN J. KORBEL (CO-PROJECT MANAGER)	
Topic Area	**Experience/Activities**
Data Collection and Data Management	• Program evaluation of food service management companies in the School Nutrition Program for FNS involving primary and secondary data collection, interviews, surveys, pair wise sampling, case studies • Comprehensive study of children and family services for the state of Oklahoma involving primary and secondary data collection including interviews and focus groups • Cost analysis of welfare reform making extensive use of microdata files and application of microsimulation analysis • Cost analysis of social insurance programs utilizing detailed microdata files • Simulation analysis studies of family poverty status and growth in government spending on income assistance
Quantitative Analysis Methods	• Application of microsimulation modeling • Present value and cash flow analysis applied to numerous financial feasibility studies. • Cost-benefit analysis in economic development • Econometric modeling in the utility studies • Statistical and descriptive analysis of program performance data
Qualitative Analysis Methods	• Work shops and focus groups for program assessment and strategic planning • Case studies of program performance
Cost-Benefit and Cost-Effectiveness Analysis	• Cost-benefit analysis in evaluating economic development of convention center, sports complexes, and theme parks • Cost-benefit analysis of Department of Commerce programs • Cost-effectiveness analysis of social services in HHS studies • Cost-effectiveness analysis in FNS FMC study • Cost-effectiveness analysis of welfare reform proposals
Training, Instructional Design	• Training and technical assistance to state and local governments in the areas of economic development and strategic planning • Professor of Economics specializing in quantitative methods
Technical Writing/Editing	• Numerous final reports for consulting studies • Published reports on welfare reform Including Welfare Reform: Issues, Objectives, and Approaches and The Administrations Welfare Reform Proposal: An Analysis of the Program for Better Jobs and Income.

Mr. Ranjit Advani (Co-project Manager). Mr. Ranjit Advani, a Partner with Price Waterhouse, has over twenty years of experience working for numerous clients on engagements involving EDP planning projects; information systems effectiveness reviews; data security and control audits; hardware, software and application feasibility studies; systems design, programming, and implementation; financial reporting and management information systems; and management of large projects. He also has supervised and participated in a number of public sector engagements. Prior to his employment with Price Waterhouse, Mr. Advani served as a systems manager for Electronic Data Systems Corporation.

RANJIT ADVANI (CO-PROJECT MANAGER)	
Topic Area	Experience/Activities
Project Management	• Director a strategic information systems planning project for the Employee Retirement System of a large state. • Partner in Price Waterhouse's Advanced Information Technology group.
Research Design, Methodology, Sampling	• Planned a study of an unsuccessful major system development project for a large real estate firm.
Data Collection and Data Management	• Reviewed a large computer center for a major real estate company.
Quantitative Analysis Methods	• Participated in a data security review of the Treasury Department. • Directed a review of accounting and financial systems of a major airline.
Cost-Benefit and Cost-Effectiveness Analysis	• Reviewed the financial management systems plans for six U.S. government agencies.
Financial Institution Practices/Procedures	• Directed a technology and effectiveness review of the Centralized Customer Accounts System for a major bank
Retail Food Industry Practices/Procedures	• Planned and directed an EFT proof of payment study for the IRS.
Training, Instructional Design	• Assisted in planning and implementation of a United Information System
Technical Writing/Editing	• Directed a team of consultants in a project encompassing definition, RFP preparation and hardware and software selection activities

Mr. Joseph Casey - (Co-project Manager). Mr. Joseph Casey is a Manager with Price Waterhouse and has over 17 years experience in social benefit program evaluation, probability surveys, health and human service policy evaluation with emphasis on impact and effectiveness, large-scale computer assisted data collection, and management training and evaluations. He has provided evaluation design and demonstration implementation support in a variety of settings including health, school nutrition, and food stamps as well as having conducted both large-scale and task order research in a number of program areas, including: Food Stamps, Unemployment, WIC, AFDC, Child Care, and Aging. Mr. Casey has been the principal author on a variety of reports ranging from evaluation handbooks to statistical reports. He has briefed policy makers and senior administrators as well as provided support for Congressional hearings and administrative law trials.

MR. JOSEPH CASEY (CO-PROJECT MANAGER)	
Topic Area	Experience/Activities
Project Management	• Project Director of national assessment of the use of privately-owned food and business management companies to manage public and private school meal programs receiving experience • Project Director during start-up phase of national study to develop profiles of State Food Stamp Program Operations. • Division Manager, technical and managerial functions applicable to education, social, benefit, and health program evaluations, quality assurance studies, large-scale data collection, and data systems development efforts. • Manager, of technical support providing expert data quality control and statistical modeling assistance to the Internal Revenue Service. • Director, computer expert system and litigation data base development and support effort for determining the settlement value of personal injury claims against the Dalkon Shield Trust.
Research Design, Methodology, Sampling	• Director of studies to examine state demonstrations of changes in Unemployment Insurance benefit quality control investigation methodologies.

MR. JOSEPH CASEY (CO-PROJECT MANAGER)	
Topic Area	**Experience/Activities**
Data Collection and Data Management	• Director of national study to estimate the quantity and market value of purchased and donated food commodities consumed annually by public school systems • Manager of a national probability survey to estimate and describe incidence of crime and violence arising out of prejudice. • Deputy Director of national study implementing complex experimental design to test alternative error-reducing strategies for use in school-based meal programs. • Manager of national survey of child care providers receiving CACFP support and families with children in child care. • Designer and Director, Computer Assisted Interviewing System. Directed multiple national and regional informational and market surveys.
Quantitative Analysis Methods	• Senior Analyst in study to validate student- and parent-reported application information for the basic post secondary student financial aid program. Study used IRS tax return data.
Retail Food Industry Practices/Procedures	• Manager, of study of policies and practices of state WIC agency administrative agencies to monitor vendor performance and control fraud and abuse.
Training, Instructional Design	• Senior Analyst providing provided technical assistance to State FSP quality control units in the development of strategies to reduce recipient fraud and abuse
Technical Writing/Editing	• Lead author of a handbook on QC demonstration and evaluation targeted for State FSP administrators. [1985-1988] • Author and/or supervising author of numerous technical reports, policy studies, handbooks, and report submitted to Congressional oversight committee

Dr. Fredric Laughlin - Quality Assurance Manager. Fredric Laughlin is the Partner in Charge of Price Waterhouse's Management Science and Economics Special Practice unit at Price Waterhouse. His experience cover many disciplines, including organizational and productivity reviews, program evaluation, management science, economics, operations analysis, energy programs, regulatory economics, systems design and implementation, data processing, and public administration. Dr. Laughlin has experience working for numerous Federal clients, including FNS, HUD, IRS, USPS, and the Department of Veterans' Affairs. Prior to his employment with Price Waterhouse, he worked as the director of the economic analysis division of the Cost of Living Council. Dr, Laughlin received his MBA and DBA from the George Washington University.

DR. FREDRIC LAUGHLIN (QUALITY ASSURANCE MANAGER)	
Topic Area	Experience/Activities
Project Management	• Served as Project Partner for Basic Ordering Agreements for Federal clients including HUD, Veterans' Administration, USPS, IRS, NOAA, and the Energy Information Administration • Partner in Charge of Price Waterhouse's Management Science and Economics Special Practice Unit • Partner on study of WIC Farmers' Market Coupon Demonstration Program
Research Design, Methodology, Sampling	• Supervised research design of a Study of FNS's FMCDP program • Partner on a Project to document, assess, and offer recommendations for the improved operation of HUD's public housing program • Supervised research design of seven tasks for the DVA's task order contract • Supervised research design of numerous tasks for Price Waterhouse's IRS task order contract
Data Collection and Data Management	• Responsible for extensive survey design for study of FMCDP program • In charge of survey of 50,000 motorboat user for the U.S. Fish and Wildlife Service • Directed a statistical and data analysis engagement to study IRS's accounts receivable
Quantitative Analysis Methods	• Partner in Charge of numerous econometric analyses for the USPS • Performed quantitative analyses for the IRS • Performed quantitative and statistical analysis for DOE

DR. FREDRIC LAUGHLIN (QUALITY ASSURANCE MANAGER)	
Topic Area	**Experience/Activities**
Qualitative Analysis Methods	• In charge of an Independent Assessment of HUD's Office of Public and Indian Housing • Responsible for management analyses for DVA and IRS
Cost-Benefit and Cost-Effectiveness Analysis	• Conducted cost-benefit analyses for USPS
Training, Instructional Design	• Responsible for training of HUD personnel for delegated processing project • Directed a detailed technical review of the VA's proposed Cost-Benefit handbook. • Responsible for conducting training sessions and preparing training manuals for the IRS
Technical Writing/Editing	• Project Partner in charge an evaluation of IRS incentive pay program. IRS based its decision to continue the program was based on the analysis presented in the final report • Directed a statistical and data analysis engagement of IRS's accounts receivable

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Mr. Thomas Colberg - Functional Leader. Mr. Thomas Colberg is the Partner in Charge of Price Waterhouse's Electronic Data Interchange Consulting Group, which specializes electronic data interchange and its implementation in industry and government. He is a member of the Electron Data Interchange Association Board of Directors and has served on the U.S. Delegation to the international EDI standards development effort sponsored by the U.N. He has over eighteen years of experience in the fields of software and systems development and management of projects involving a wide variety of computer solutions, including EDI, financial systems, and other applications. Prior to his employment with Price Waterhouse, Mr. Colberg served as a Budget Analyst for the Office of Management and Budget. He received his MS and BA from the University of Illinois.

MR. THOMAS COLBERG - FUNCTIONAL LEADER	
Topic Area	Experience/Activities
Project Management	• Partner in Charge of Electronic Data Interchange Group conducting numerous project assignments • Partner in Charge of 12 month EDI feasibility study for the IRS • Partner in Charge of EDI planning study for a grocery products manufacturer • Partner in Charge of EDI strategic planning engagement for a Fortune 200 manufacturing company
Research Design, Methodology, Sampling	• Responsible for research design of major engagement for engagements in both the public and private sector • Formulated an EDI system concept for networking of the St. Lawrence Seaway
Data Collection and Data Management	• Led a fact finding team for an EDI feasibility study for a Fortune 100 company in the health industry • Identified obstacles to EDI implementation in a large automotive industry • Partner in Charge of EDI cost benefit analyses conducted for clients in fuel, health care, and aerospace industries
Cost-Benefit and Cost-Effectiveness Analysis	• Conducted a cost benefit analysis for EDI implementation of a health care provider • Conducting a cost-benefit analysis for the IRS to analyze opportunities for EDI to file IRS forms, and exchange information with banks, state and local governments

MR. THOMAS COLBERG - FUNCTIONAL LEADER	
Topic Area	**Experience/Activities**
POS, EFT/EBT Technology and Practice	• A recognized leader in advanced technologies in the realm of Electronic Data Interchange • Has conducted numerous conceptual frameworks and implementation plans for clients in telecommunications, fuel, and health fields
Retail Food Industry Practices/Procedures	• Partner in charge of EDI planning study of a grocery products manufacturer serving the food industry. Deliverables included documentation of current EDI capabilities, opportunities to use EDI to support Quick Response in the future, and a software implementation plan
Training, Instructional Design	• Partner in Charge of an internal programmer/analyst training program conducted by Price Waterhouse. Supervised the recruiting of 26 outstanding candidates, selection of facility, development of the curriculum, and management and presentation of the training itself. The training program is 14 weeks long, and covers topics such as JCL, C, and COBOL languages
Technical Writing/Editing	• Produced corporate policy document and a five year implementation plan for a manufacturing company • Recommended an organization structure to coordinate a company-wide implementation of EDI for a large health firm

Mr. John Benton - Functional Leader. Mr. John Benton, Chairman and CEO of Benton International, is a leading manager in the areas of business planning, strategic planning, marketing, and mergers and acquisitions in the EFT/POS field. Since the mid 1980s, he has devoted considerable effort to the development and installation of an integrated planning model for evaluating and redesigning the entire retail bank product distribution system. Prior to his tenure with Benton International, Mr. Benton was the Presidentially appointed Executive Director of the National Commission on Electronic Fund Transfers. The NCEFT created much of the policy foundation for significant banking legislation passed into law by the Federal government in recent years. He also has published one of the past decade's most requested reprints from the Harvard Business Review, "The Payoffs and Pitfalls of EFT" (July 1977).

JOHN B. BENTON (FUNCTIONAL LEADER)	
Topic Area	Experience/Activities
Project Management	• Served as the Chairman, for the Electronic Funds Transfer Association (EFTA) inter-industry/government Task Force on Electronic Benefits Transfer. This task force includes representatives of FNS. • Presidentially-appointed Executive Director of the National Commission on Electronic Fund Transfers (1976/78), a position that bridged both the Ford and Carter administrations. The NCEFT created much of the policy foundation for significant banking legislation passed into law by the federal government in recent years. • Formation Manager for the Interlink POS network and ACCEL (POS and ATM) network.
Research Design, Methodology, Sampling	• Systems and cost analyst with The Rand Corporation, where he contributed for several years to the application of systems analysis disciplines to public sector problems, particularly those of the New York City Police Department.
POS, EFT/EBT Technology and Practice	• Strategy development for regional and national EFT networks. • Policy development on EFTA EBT Task Force. • Policy development as Executive Director of National Commission on Electronic Funds Transfer.

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JOHN B. BENTON (FUNCTIONAL LEADER)	
Topic Area	**Experience/Activities**
Financial Institution Practices/Procedures	• Lead the design, development, and implementation of an integrated planning model for the evaluation and re-architecture of the core delivery system of retail banks, including product/revenue forecasting, transaction forecasting, distribution channel optimization analysis, capacity planning, and customer acceptance analysis. In applications for specific major banks, these modeling efforts are leading to the development of the "ideal case" delivery system designs that are 20% and 40% less expensive than the imbedded structures. • Managed a joint venture project team to develop a delivery system for both the merchant acquire and issuers side of a merchant-related card services program for a major European bank. • Served as a special advisor to the Federal Home Loan Bank Board to FSLIC regarding the terms of financial assistance agreements negotiated under the Bank Board's Southwest Plan. Specifically, this responsibility relates to advising FSLIC on the most efficient use of assistance funds with respect to consolidation.

<u>**Ms. JoAnn Kuchak - Functional Leader**</u>. Ms. JoAnn Kuchak will serve as Macro's subcontract manager. She has 19 years of experience, including 12 years as an executive in research and evaluation. Ms. Kuchak's background includes the management of large scale research and evaluation projects in FNS' food assistance programs, as well as in the area of finance and lending. Ms. Kuchak's background in research and evaluation also includes FNS' food assistance programs. With her professional training in education, Ms. Kuchak is knowledgeable in instructional technology and training strategies, and has developed curriculum, training materials, and has conducted training. During Ms. Kuchak's 19-year career, she has directed or served as the Officer in Charge of numerous other projects, including several Task Order contracts, with an aggregate value in excess of $30 million. She has demonstrated the capability to manage large, complex projects, including those conducted in a task order environment. She has worked successfully with other firms in collaborative efforts and understands prime/subcontractor relationships.

JOANN KUCHAK (FUNCTIONAL LEADER)	
Topic Area	Experience/Activities
Project Management	• Management of large-scale research and evaluation in FNS food assistance programs and in finance and lending • Directed task order contract for Treasury Department to coordinate Federal Reform "88" initiatives • Directed project to support State Food Stamp Agencies to demonstrate strategies to reduce QC error rates.
Research Design, Methodology, Sampling	• Directed technical staff in assisting states in improving demonstration and evaluation design. • Directing current WIC Dynamics and Child Nutrition Demonstration Projects to design and implement 3 demonstrations of strategist increase participation and evaluate impact of increased
Data Collection and Data Management	• Conducted case studies at state and local food stamp offices to ascertain local operations • Current WIC Dynamics Survey of 800 state and local agencies • Officer in changes of HUD Quality Control Project, multi-year data collection and evaluation
Quantitative Analysis Methods	• Evaluation of FNS School Nutrition Program meal application process, involving 500,000 meal participants in the demonstration, and 50,000 in the evaluation. • Conducted a survey in 1989 to provide reliable estimates of incidence and nature of ethnically-based violence

JOANN KUCHAK (FUNCTIONAL LEADER)	
Topic Area	**Experience/Activities**
Qualitative Analysis Methods	• Used analysis techniques to model factors influencing Choice of Child Care and compared Child Care usage patterns for the Child Care Food Program
Cost-Benefit and Cost-Effectiveness Analysis	• Evaluation and management studies of BEOG program to implement system for detecting and controlling errors • Evaluation of short and long-term costs and benefits of procedural errors in the AFDC program. • Quality control studies of payment errors and loan defaulters in Guaranteed Student Loan and HEAL School Nutrition Program application process corrective active demonstration
Financial Institution Practices/Procedures	• Directed project to examine quality of lender operations. • Examined roles of insurers in reimbursing lenders for defaulted loans. • Understanding of Nation's banking and electronic systems. • HUD bond financing of Section 8 projects.
Retail Food Industry Practices/Procedures	• Developed turnkey system for surveying food purchases by school districts and institutions involved in USDA's National Commodity Processing Program
Training, Instructional Design	• Development of WIC Computer assisted nutrition education programs • Developed curriculum, training materials, and delivered training for parents and child care providers • Developed print and video training materials to enhance the Family Child Care Training Package for the U.S. Army.
Technical Writing/Editing	• Manual for Head Start directors and handicap coordinators for identifying speech impaired children • Documentation of State-level management of vendors participating in WIC via WIC Vendor Management Study for FNS

Leigh Seaver - Functional Leader. Mr. Leigh Seaver, a Market Facts Vice President in the Public Sector Research Group, has planned, performed, and managed survey projects, methodological studies, program evaluations, demonstration projects, and policy research in a variety of different substantive areas for over eighteen years. His expertise includes extensive social science research from conceptualization and design through test and scale development, field data collection, statistical data analysis, and report preparation. After receiving a PhD in Social Psychology from Northwestern University, Dr. Seaver became Assistant Professor of Social Psychology at Penn State University and also worked with the Office of Analysis and Evaluation of USDA's Food and Nutrition Service. There, as Acting Director of Program Evaluation, he managed a staff of 15 research professionals and an annual budget over eight million dollars. During his eight years at FNS, he directed research and program evaluations on the Food Stamp, WIC, and Child Nutrition Programs, as well as the evaluation of the Reading EBT program.

LEIGH SEAVER (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Vice president of the Public Sector Research Group, • Directed Research and program evaluations on food stamp, WIC, and Child Nutrition Program
Research Design, Methodology, Sampling	• Designed and conducted a study to estimate the expected market response to different plans for marketing information services.
Data Collection and Data Management	• Task leader of CATI interviews for the Air Force • Collected field interview data from a nationally representative sample 2,000 homeless persons who were users of homeless shelters
Quantitative Analysis Methods	• Project director on a study for the U.S. Air Force to interview college and high school students
Qualitative Analysis Methods	• Review of quality control for HUDs Rental Assistance Program serving as corporate officer
Cost-Benefit and Cost-Effectiveness Analysis	• Evaluated an advertising campaign for the United States Postal Services
POS, EFT/EBT Technology and Practice	• Evaluating an off-line EBT demonstration for the food and Nutrition Service

LEIGH SEAVER (RESEARCH)	
Topic Area	**Experience/Activities**
Technical Writing/Editing	• Responsible for production of numerous final deliverable documents

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Mr. Paul F. Coenen - Functional Leader. Mr. Paul Coenen, the President of Electronic Strategy Associates, has over fifteen years of experience with automated teller machines, point-of-sale, automated clearinghouses, credit cards, debit cards, electronic data interchange, electronic benefit transfer, EFT strategy, new product development, and business planning. He has authored over twenty articles that have appeared in some of the most widely respected financial publications, and has been cited in numerous national newspapers and magazines. Mr. Coenen has spoken at many major EFT conferences, and was nominated for the EFT Hall of Fame. Prior to his employment with ESA, he worked for PULSE and TYME networks, as well as the Rand Corporation. He has completed his Ph.D. degree to candidacy at the University of California.

PAUL COENEN (FUNCTIONAL LEADER)	
Topic Area	Experience/Activities
Project Management	• President of Electronic Strategy Associates and responsible for all ESA service and deliverables. • Manager of off-line EBT feasibility study for FNS. • Manager of ESA contract with NYNEX to accept credit cards a NY/NJ airports. • First Vice-President to PULSE.
Research Design, Methodology, Sampling	• Participated in conceptualization, development, and marketing of the first national, paperless POS system. • Provided a complete and critical review of Fujitsu's internal analysis and plans for EBT products.
Data Collection and Data Management	• Performed a complete audit of Money Station's POS program.
POS, EFT/EBT Technology and Practice	• One of the foremost leaders in the country in POS, EBT, and EFT technology. • Clients include USDA, NYNEX, Drebold, Fujitsu, GTE, BUYPASS.
Financial Institution Practices/Procedures	• Developed all financial institution marketing materials for BUYPASS system.
Training, Instructional Design	• Gave introducing seminars to GTE as the firm entered the EBT market.

PAUL COENEN (FUNCTIONAL LEADER)	
Topic Area	**Experience/Activities**
Technical Writing/Editing	• Wrote and produced a sales and marketing brochure for the use of Smart Cards.

<u>**Mr. Arthur W. Burger - Functional Leader**</u>. Arthur W. Burger, M.A., is a management and organization development consultant with over 10 years of FNS program experience at the Federal, state and local level. Mr. Burger is a specialist in organizational process, quality assurance, and information systems design, evaluation and implementation. Mr. Burger is the author of several management texts, and has developed six professional training seminars, specific to food and nutrition programs. Currently, Mr. Burger is engaged in the design of public health and WIC information system networks for the states of Oklahoma and West Virginia. In addition, he is directing the design of a WIC food cost forecasting model for the New York program. In addition to his work at BCA, Mr. Burger serves as an adjunct faculty member in the Information Systems Management Program at the University of San Francisco and is a registered consultant with the U.S. Office of Personnel Management, Organizational Development Services Network.

ARTHUR BURGER (FUNCTIONAL LEADER)	
Topic Area	Experience/Activities
Project Management	• Project Director for design of statewide WIC information system network, West Virginia Department of Health. • Project Director for design of statewide integrated public health information system network and development of procurement documents, Oklahoma Department of Health.
Research Design, Methodology, Sampling	• Project Director for development of a simplified methodology for user evaluation of information system performance in State Agencies participating in the WIC Program, USDA.
Data Collection and Data Management	• Project Director for national survey of income eligibility verification process in the WIC Program, USDA, Food and Nutrition Service. • Project Manager for a national survey of participants and providers in the Temporary Emergency Food Assistance Program (TEFAP) for a Special Report to Congress, USDA.

ARTHUR BURGER (FUNCTIONAL LEADER)	
Topic Area	**Experience/Activities**
Quantitative Analysis Methods	• Project Analyst for assessment of the societal costs of adolescent pregnancy and parenting, National Institute of Child Health and Human Development. • Project Director for the development of a micro-simulation decision support model of treatment resource allocation strategies, National Institute on Alcohol Abuse and Alcoholism. • Research Associate for study of the cost to local government in complying with federal laws and regulations, National Science Foundation.
Qualitative Analysis Methods	• Consultant for evaluation of data system facilities maintenance contractor services, Maine Department of Human Services. • Consultant for the evaluation of provider quality control, Connecticut Department of Health. • Consultant for design of a provider compliance promotion and enforcement system, Tennessee Department of Public Health. • Senior Consultant on a project to assess coordination between the Maternal and Child Health Program and the WIC Program, US-DHHS, Office of the Secretary. • Consultant for evaluation of the WIC Program; implementation of enhanced delivery system; and, development of CSFP grant application, Maryland Department of Health and Mental Hygiene.

ARTHUR BURGER (FUNCTIONAL LEADER)	
Topic Area	**Experience/Activities**
Training, Instructional Design	• Subcontract Director for system implementation and training support services, Washington Department of Health and Social Services. • SYSQUICK- Information System Lifecycle Management. Creator of three day training seminar for Federal, state and local program managers to on the non-technical manager's role in overseeing information systems. • M-TRACX EXPRESS- Implementation of Data System Network. Senior Designer and Master Trainer for a two day training program for state and local staff in the use, security and maintenance of a statewide information system network; commissioned by the Michigan Department of Public Health. • PERFORM- Efficiency and Integrity in WIC Operations. Senior Designer and Master Trainer for a five day national training conference to enhance program operations; commissioned by USDA, FNS. • SIS-GUIDE- "Simplified Information System Evaluation Guidance." Senior Designer and Master Trainer for a one day seminar for government managers to convey the principles of user evaluation of data systems in the WIC Program; commissioned by USDA, FNS. • QUICK- "Quality Undertakings Intended to Cure Kraziness." Creator of a three day motivational seminar for public health clinic staff and supervisors. • AFASGAM- "Analysis of Fraud and Abuse Simulation Game." Creator of a three day training seminar for government managers to promote and enforce compliance by retail grocers providing services to the WIC Program (All rights purchased by USDA, FNS)
Technical Writing/Editing	• Subcontract Director for evaluation and technical assistance to state-initiated productivity and quality control initiatives in the Food Stamp Program.

Dr. Glenn Galfond - Functional Leader. Dr. Glenn Galfond, a Senior Manager with Price Waterhouse, is an expert in the areas of statistical sampling, analysis and modeling. He has fourteen years of computer programming experience, including experience with a wide variety of computer hardware and software, survey processing, data analysis and statistical computing, computer simulation, modeling, and system design and implementation. He received his B.S. in Mathematics cum laude from the University of Maryland, and his M.S. and Ph.D. degrees in statistics from Stanford University. Dr. Galfond has also published numerous sampling and statistical articles.

GLENN GALFOND (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Project Director for IRS Research and Development BOA • Project Director for IRS Management Analysis BOA • Project Director for Energy Information Administration Task Order Contract • Project Director for multi-year, multi million dollar project to evaluate Department of Education financial aid programs • Project Director for multi-year, multi-million dollar study of motorboat fund use for Fish and Wildlife Survey
Research Design, Methodology, Sampling	• Directing research design, methodology, and sampling for more than twenty federal government research projects.
Data Collection and Data Management	• Directed over 30 surveys, including mail, telephone, and in person interview surveys of more than 400,000 individuals.
Quantitative Analysis Methods	• Senior Manager in Charge of Price Waterhouse's Quantitative Methods Group • Directing development and simulation of research allocation models • Expert support on qualitative analysis to over a dozen federal agencies
Qualitative Analysis Methods	• Evaluator of regulatory burden and compliance issues for Department of Education Financial and Programs Cost-Benefit and Cost-Effectiveness Analysis
Cost-Benefit and Cost-Effectiveness Analysis	• Cost-Benefit analysis of SBA Loan Program • Cost-Benefit analysis of VA's one-quarter billion dollar medical center automation project. • Cost-Benefit analysis of configuring Financial Management Service's Regional financial Centers

GLENN GALFOND (RESEARCH)	
Topic Area	**Experience/Activities**
Technical Writing/Editing	• Preparation for over fifty technical reports for various clients • Prepared several statistical publications

<u>Mr. Wayne Boucher</u>. Since joining Benton International in January 1984, Mr. Boucher has worked with numerous private and public clients on projects that require use of advanced techniques of strategic forecasting, issues management, and policy analysis--areas in which he is recognized nationally for his contributions over the last 25 years. He recently completed a study of the development of policy recommendations and a strategic plan for a major U.S. regional ATM/POS network. Mr. Boucher also led a two-year, multi-client study of the outlook to 1992 for EFT/POS in individual retail segments, covering topics such as barriers to implementation, potential consumer concerns, national and industry-specific trends, and the likely business results of full implementation of EFT/POS. Mr. Boucher's prior experience includes service as Senior Research Associate at the Center for Futures Research in the Graduate School of Business Administration at the University of Southern California (1978-1984); Deputy Director and Director of Research of the presidentially-appointed National Commission on Electronic Fund Transfers (1976-1978); co-founder and Vice President of The Futures Group (1971-1976); Research Associate at the Institute for the Future (1969-1971); Deputy Assistant to the President of The Rand Corporation (1963-1969); and Instructor at the University of Missouri (1958-1963).

WAYNE BOUCHER (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Leadership of a two-year, multi-client study of the outlook to 1992 for EFT/POS in individual retail segments, covering topics such as barriers to implementation, potential consumer concerns, national and industry-specific trends, and the likely business results of full implementation of EFT/POS.
Research Design, Methodology, Sampling	• Design and conduct of numerous Focused Planning Efforts (FPE's) to determine current and future consumer preferences for the sale and service of various bank products by alternative distribution channels.
POS, EFT/EBT Technology and Practice	• Development of policy recommendations and a strategic plan for a major U.S. regional ATM/POS network. • Identification and evaluation of possible features of an enhanced debit card, determination of usage rates and pricing, and analysis of the business case for this card under different utilization scenarios.

WAYNE BOUCHER (TECHNICAL)	
Topic Area	**Experience/Activities**
Financial Institution Practices/Procedures	• Development and implementation of a process to enable a vendor's major account representatives to analyze a financial institution's equipment needs and prepare a strategic sales plan on the basis of indicators describing the institution's business orientation, market share, financial performance, productivity, and distribution system.
Training, Instructional Design	• Taught as an adjunct professor at UCLA, the University of Connecticut, and the School of Public Administration at USC.
Technical Writing/Editing	• Mr. Boucher is author or co-author of more than 130 papers, book chapters, and reports. His books include Systems Analysis and Policy Planning, with E.S. Quade (1968); The Study of the Future: An Agenda for Research (1977); Applying Methods and Techniques of Futures Research, with J.L. Morrison and W.L. Renfro (1983); and Futures Research and the Strategic Planning Process, with J.L. Morrison and W.L. Renfro (1984).

Mr. John Broderick. Since joining Benton International in March 1985, Mr. Broderick has directed and actively participated in a wide variety of client engagements, bringing to bear advanced analytical disciplines and the practical skills gained through more than 25 years of business management experience. The focus of Mr. Broderick's consulting is the financial services industry, with emphasis on strategic planning, product development and marketing, distribution system optimization, technology integration, and profit improvement. He recent had overall management responsibility for a comprehensive program to integrate the resources of two major banks located in the southwest. Major elements of this program included technology and back office consolidation, product integration, branch distribution planning and consolidation, customer and employee communications, and staff and administrative department consolidation. Mr. Broderick's prior experience includes service with several major banking institutions. At Crocker National Bank he held the positions of Executive Vice President, Consumer Banking (1982-1984); Executive Vice President, Operations and MIS Division (1979-1982); and Senior Vice President, Computer and Telecommunications Operations (1977-1979). At Citicorp he served as Vice President and Chief Financial Officer of Citibank Person to Person, Inc. (1974-1977); Vice President and Director of Strategic and Business Planning for the Corporate Services Division of Citibank New York (1970-1972); and Manager of Production Analysis and Cost Accounting of Citibank New York;

JOHN BRODERICK (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Overall management responsibility for a comprehensive program to integrate the resources of two major banks located in the southwest. Major elements of this program included technology and back office consolidation, product integration, branch distribution planning and consolidation, customer and employee communications, and staff and administrative department consolidation.
Research Design, Methodology, Sampling	• Implemented a distribution system planning model to analyze alternative financial service distribution architectures for a money center bank, considering the interaction of market demographics, market segmentation, pricing, distribution channels, product offering, operating cost, and consumer product and channel preference.

JOHN BRODERICK (TECHNICAL)	
Topic Area	**Experience/Activities**
Cost-Benefit and Cost-Effectiveness Analysis	• Performed a functional and cost analysis of the systems and technology, marketing and product management, and distribution system administration of a major money center bank. Participated in the design and implementation of organizational restructuring to eliminate redundancy and other inefficiencies.
Financial Institution Practices/Procedures	• Developed a strategic technology plan for a major national bank designed to support the product applications, transaction processing, and on-line service delivery requirements of multiple banking franchises through regional processing utilities. Also developed the technical implementation plan and financial business case to support the funding of this multi-million dollar technology strategy.

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Mr. Louis Buglioli. Mr. Louis Buglioli, President and Chief Operating Officer with Benton International, brings over fifteen years of experience in financial services and payment services industries to the Project Team. His expertise extends into international, wholesale, and retail banking systems, including point-of-sale, wire transfer, credit and debit cards, ATMs, and branch automation. Mr. Buglioli also brings experience in a variety of financial fields to the Project Team. As President of Telecredit, he was responsible for the firm's third-party processing of POS debit cards, credit cards, and check authorizations for a clientele of 500 financial institutions and 125,000 retail establishments nationwide. As Vice President of Citicorp, Mr. Buglioli held various positions in the Consumer Services Group. He played a major role in the introduction and enhancement of ATMs, the development of regional business centers, and the introduction of Citicard at the point-of-sale.

LOUIS P. BUGLIOLI (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Project management of the operational integration of merging financial institutions. • Responsibility for large, multi-project, client engagements.
Cost-Benefit and Cost-Effectiveness Analysis	• Lead numerous projects assessing the cost effectiveness of data processing operations alternatives for financial institutions and service providers.
POS, EFT/EBT Technology and Practice	• Formerly, President, Chief Operating Officer, and Director of Telecredit, Inc., a $100 million public company in the payment services industry processing credit cards, check authorizations, and POS debit cards with customer base of more than 500 financial institutions and 125,000 retail establishments nationwide. • EFT Strategy for the leading national merchant and consumer bank.

LOUIS P. BUGLIOLI (TECHNICAL)	
Topic Area	**Experience/Activities**
Financial Institution Practices/Procedures	• As Senior Vice President of Crocker National Bank, he directed all overseas correspondent banking and trade finance activities. His duties included managing all Edge Act offices in the U.S. for the International Division. Among his responsibilities were marketing, product management, sales, operations, telecommunications, and systems. • As head of Crocker Banks's retail production operation, he was responsible for all check processing and related branch central back office activities. • As Vice President of Citicorp, Mr. Buglioli held various positions in the Consumer Services Group. He played a major role in "branch of the future" planning, the introduction and enhancement of automated teller machines, the development of regional business centers, and the introduction of Citicard at the point of sale. In addition, he managed the check processing operations.

Ms. Elizabeth McClellan Byrom. Ms. Elizabeth McClellan Byrom is a Macro consultant. Ms. Byrom plans and conducts workshops; prepares and monitors budgets; leads, coordinates, and facilitates committees, advisory boards and policy making groups; evaluates programs, activities, and products; supervises staff; maintains a national network of prominent trainers; writes and produces educational materials. Ms. Byrom has coordinated and/or conducted dozens of highly acclaimed workshops for educators. Recent topics include Professional Collaboration (Cooperative Teaching and Collaborative Consultation); Integrating Technology into the Curriculum, Developing Multimedia/Hypermedia Applications for Instruction; Using Technology to Teach Math, Science, and Writing; HIV/AIDS Curriculum and Instruction. She earned a Doctorate in Curriculum and Instruction from Virginia Polytechnic and State University.

ELIZABETH BYROM (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Responsible for planning, implementing, and evaluating a number of nationwide training program. • Responsible for personnel supervision with Macro International.
Training, Instructional Design	• Provided numerous training manuals and instructional materials. • Conducted dozens of educational workshops. • Managed three Federally funded projects to train college and university professors in instructional technology. • Evaluated professional development Academics that help educators update their knowledge and skills.

Ms. Julie M. Carroll. Julie M. Carroll, M.S., Macro International, is a nutritional epidemiologist with ten years of program operation and management experience. Previously, Ms. Carroll served as the state director of the New Mexico WIC Program, prior to which she worked as a WIC local agency director and a clinic nutritionist. Ms. Carroll is co-author of Breastfeeding: A Problem-Solving Manual, as well as a number of journal articles. In addition to her work at BCA, Ms. Carroll is pursuing a Doctorate of Public Health at the University of California, Berkeley. (Degree anticipated June 1992).

JULIE CARROLL (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• State WIC Program Director, New Mexico WIC Program. Managed and balanced $13 million program budget. Supervised 85 state and local agency staff.
Research Design, Methodology, Sampling	• Developed and implemented a prenatal surveillance system on a statewide basis. Designed and evaluated an intervention to improve the duration of breastfeeding. • Directed the development and implementation of performance standards and criteria for evaluating direct service staff.
Quantitative Analysis Methods	• As State WIC Program Director, established staff-client ratios and performance standards for contract agencies.
Training, Instructional Design	• Graduate Instructor, University of California, Berkeley; "Nutrition Policy." • Co-Instructor, University of San Francisco (undergraduate); "Research Methods and Statistics."

<u>Dr. Sandra S. Chipungu</u>. Dr. Sandra Chipungu serves as a part-time evaluator at Macro. Currently she is a key team member on the OSAP Cross-Site Evaluation of Pregnant and Postpartum Women and Their Infants Demonstrations Program. She is also an assistant professor in Social Work at Catholic University. Dr. Chipungu has an extensive background in child and social welfare. Previously, Dr. Chipungu worked for Abt Associates as a full-time staff evaluator; and was director of research for the Department of Social Services for the State of Maryland. Her primary areas of research have included African American children and child welfare, African-American foster parents and social policy. In Maryland, she conducted a project to reunite African American families. Recently, for the Institute of Social Justice in Washington, D.C., she conducted a research project on Salvadoran mothers and their children. With Joyce Everett, she is co-editor of Scorned Children: An African American Perspective, to be published by the Rutgers University in 1991. As a consultant for the National Urban League, Dr. Chipungu developed a paper that analyzed Black Teen Fathers, Black Extended Families, and Help Seeking Behaviors." Dr. Chipungu holds a Ph.D. in Social Work from the University of Michigan.

SANDRA STUKES CHIPUNGU (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Responsible for conceptualization and conduct of the implementation component of 100 projects under pregnant and postpartum women, infants, and children project funded by OSAP • Responsible for numerous research and evaluation projects in a wide range of subjects.
Research Design, Methodology, Sampling	• Over ten years of experience in research design • Design of evaluation of new endeavors, pregnant postpartum woman, infants and children for administrative and program improvement purposes • Design of evaluation for reunification of foster care children with their natural parents • Design of evaluation of impact of monthly reporting on food stamps/AFDC
Data Collection and Data Management	• Responsible for data management survey of black americans as part of first major national black american survey in the U.S. • Survey of black single working mothers-data collection and management responsibility

SANDRA STUKES CHIPUNGU (RESEARCH)	
Topic Area	**Experience/Activities**
Quantitative Analysis Methods	• Over ten years experience as a survey methodologist • Currently primary responsibility for conceptualization/conduct of cross-site evaluation of 100 projects under OSAP project
Qualitative Analysis Methods	• As part of numerous engagements, used qualitative techniques and sociologist training • Combines training as social worker/sociologist with technical background to conduct ethnically sensitive and culturally appropriate evaluations
Technical Writing/Editing	• In over 10 years of research design and evaluation experience, has used technical writing and editing skills to develop to produce effective and comprehensive written products.

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Dr. Robert F. Cook. Dr. Robert Cook, Macro International, has 18 years of experience in quantitative research methods and in process and impact analysis. He possesses a unique blend of analytic expertise and institutional knowledge of intergovernmental programs and their operation at the Federal, State and local level. Dr. Cook received his Ph.D. in Business and Industrial Economics from Lehigh University.

ROBERT COOK (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Project director of an evaluation of the Unemployment Insurance Benefit Quality Control Program. The study involved a review of the statistical design, a survey of State QC implementation, a cost-benefit analysis and a series of case studies of State corrective action programs.
Research Design, Methodology, Sampling	• As a senior research associate, designed net impact evaluations for State AFDC workfare programs for a national study of these programs funded by the Ford Foundation.
Data Collection and Data Management	• Impact of apprenticeship Training--Directed a study of the net impact of apprenticeship training using data from the National Longitudinal Survey of the High School Class of 1972. The study was sponsored by the Bureau of Apprenticeship Training, U.S. Department of Labor.
Quantitative Analysis Methods	• Directed a study of consistency in the data collected by the UI quality control program. Data collection was carried out in six States for the Unemployment Insurance Service.
Qualitative Analysis Methods	• Directed a series of case studies of State, SDA, and service provider staff backgrounds and training needs for the U.S. Department of Labor.
Cost-Benefit and Cost-Effectiveness Analysis	• Principal investigator on this net earnings impact study of participants in the Comprehensive Employment and Training Act (CETA) program.
Technical Writing/Editing	• Published 5 books and 11 articles.

Dr. Donald DeLuca. Dr. Donald DeLuca, a Senior Manager with Price Waterhouse, is an renowned expert in survey research design and analysis. He has conducted research on attitudinal and behavioral issues on a wide variety of substantive topics. Dr. DeLuca is the co-author of two books, and has authored numerous journal articles and book chapters as well. He is an active member of both the American Association for Public Opinion Research and the World Association for Public Opinion Research, and has served on the Executive Councils of each. Dr. DeLuca is also an active member of the American Sociological Association. He has presented papers at the annual conferences of each of these professional organizations. Prior to his employment with Price Waterhouse, he served as a Vice-president in the Gallup Organization, and served as Director of the Roper Public Opinion Research Center at Yale University. Dr. DeLuca received his PhD in Sociology at Cornell University.

DONALD R. DELUCA (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Manager of Price Waterhouse Survey Research Center conducting numerous surveys for public, private, and non-profit sector clients • Director of Gallup public affairs surveys for government agencies, academic and scientific studies, and for surveys on the topic of education. • As Director of the Yale University Roper Center managed all aspects of the design and implementation of the surveys conducted there including studies on the public perception of technical risks and benefits; incentives and opportunities for industrial research and development; private-non-profit foundation formation, growth, and decline; and the behavior of stock market investors.
Research Design, Methodology, Sampling	• Design of samples and questionnaires for numerous mail, telephone (including RDD and list samples) and in-person surveys • Design and conduct social science research on attitudinal and behavioral issues for a wide variety of substantive topics.

DONALD R. DELUCA (RESEARCH)	
Topic Area	**Experience/Activities**
Data Collection and Data Management	• Managing a telephone survey of 7,500 taxpayers contacted by IRS Collection Function. • Survey director on an evaluation of the Small Business Administration 7(a) guaranteed business loan program • Managing a telephone survey of 6,000 taxpayers contacted by IRS Examination Division • Director of CATI telephone interviewing survey for an evaluation of the Food and Nutrition Service's Women, Infants and Children (WIC) Farmers' Market Coupon Demonstration Program • Managed a "Census Awareness Evaluation" of the Census Bureau's publicity campaign for the "1988 Dress Rehearsal" • Conducted a survey of attitudes toward U.S.-European Relations for the Delegation of the Commission of the European Communities • Manager of statistical surveys for NAB, NPES, CEBMA, and other professional associations
Quantitative Analysis Methods	• Application of factor analysis, segmentation analysis, regression and other multivariate analysis techniques • Statistical and descriptive survey analysis • Demographic analysis and population projections
Qualitative Analysis Methods	• Design, organized and conducted focus group research and in-depth interviews research projects • Design and conduct of case studies
Training, Instructional Design	• Taught both graduate and undergraduate courses in survey research design and analysis
Technical Writing/Editing	• Numerous reports for research studies • Co-author of two books: Perceptions of Technological Risks and Benefits (with Leroy C. Gould, et. al.) New York: Russell Sage Foundation, 1988; and, Measuring the Social Impact of Natural Resource Policies (with William R. Burch). Albuquerque, New Mexico: University of New Mexico Press, 1984. • Authored numerous journal articles, book chapters, and papers presented at professional meetings as well

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Dr. Michael T. Errecart. Dr. Michael Errecart, a Macro vice president, directs the company's Applied Research Division, which handles Macro's work in social welfare, health, training, and market research. Dr. Errecart has a sound background in sampling and survey data collection, applied research, and information systems. Dr. Errecart specializes in sampling problems, but has designed survey control systems, participated in training, designed instruments, and participated in other related tasks. Dr. Errecart earned his Master's degree and doctorate from The Johns Hopkins University in mathematical sciences, where he specialized in mathematical optimization and statistics.

MICHAEL T. ERRECART (MANAGEMENT)	
Topic Area	Experience/Activities
Project Management	• Director of Macro's Applied Research Division • Current Director of WIC Dynamics Study • Corporate responsibility for current research projects including WIC, Job training, adult education survey of school WIC school software and hardware, school health; market research telephone surveys, HUD public housing on evaluation of high-risk youth demonstration projects
Research Design, Methodology, Sampling	• Project design and sampling methodology of HUD quality control in rent-subsidy programs • Design and improvement of computer assisted nutrition education system for WIC • Sample design weighting and variance estimates for YRBS school surveys for CDC to monitor high-risk behaviors • Sample design of survey of 2,000 day care centers • Development of dual frame sampling plan for telephone surveys
Data Collection and Data Management	• Project Director or PI on major school -based survey and health surveys; THTM, NCYFS, the 5 Maryland Drug Surveys • CDC survey of reproductive health in New York women using CATI system. • Telephone survey manager/advisor in areas of reproductive health, AODA, insurance (75 surveys), day care, alcohol and other drug use
Quantitative Analysis Methods	• Evaluation of "Just Say No" slogan and campaign as result of 20,000 surveyed students and parents • Analyst on 3-year feasibility study of Monroe County (NY) Long Term Care Program

MICHAEL T. ERRECART (MANAGEMENT)	
Topic Area	**Experience/Activities**
Qualitative Analysis Methods	• BEOG Quality Control Study Analysis • NCES school surveys' senior analyst • Lead analyst on "numerous research and evaluation studies concerning adolescent health, AIDS/HIV, alcohol and other drug use
Cost-Benefit and Cost-Effectiveness Analysis	• Analysis of impact of location on cost and services of rural hospitals HHS • Designed model for rating cost estimates at each of several levels for U.S. Office of Education • Developed models in estimating costs for ICC • utilized time service analysis and other high order log structures for U.S.P.O.
POS, EFT/EBT Technology and Practice	• Directed starting and pilot program evaluation of 9-year Pull Grant Processing System for Department of Education
Financial Institution Practices/Procedures	• Survey of lending and borrowers in the Guaranteed Student Loan Program: 8,000 borrowers and 800 lenders. Operations review at 30 VXK
Training, Instructional Design	• Developed electronic grade book for elementary teachers. • Design consultant on projects to develop voice-driven painting program, a social studies database, and various print, video and audit projects • Developed simulation software to assist young adults with special needs
Technical Writing/Editing	• Developed book on basic epidemiological methods, for assessing drug abuse problems in developing countries for U.S. State Department • Evaluated Interstate Job Bank for Department of Labor • Evaluated the effectiveness of Teenage Health Teaching program • Evaluated issues in sampling Blacks and Hispanic school-based surveys.

Dr. Carolyn Harris. Dr. Carolyn Harris brings substantial experience in instructional design, computer-assisted instruction development, and program evaluation. In addition to her grasp of classroom processes (based on her many years as a teacher), and her strong background in developing instruction for special needs learners, she brings to this project extensive experience with the technology used in developing instructional materials.

Dr. Harris was project director of the interactive videodisc development project, "An Interactive Videodisc Program to Evaluate and Train Job-Related Math Skills for Transition." Prior to that, Dr. Harris served as deputy project director on a research and development project, "Using Simulation Technology to Promote Social Competence of Handicapped Students." The integrated videotape, computer software, and print package resulting from this project is currently published by American Guidance Service as *Social Skills on the Job*.

Dr. Harris received her doctorate in educational research and evaluation from the Virginia Polytechnic Institute and State University.

CAROLYN D. HARRIS (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Current Project Director on OSEP "Making Administrative Decisions About Technology by Examining Promising Instructional Practices" • Project Director on videodisc program for evaluating and training job-related math skills. • Deputy Project Director on research project using simulation technology to promote social competence of handicapped students
Research Design, Methodology, Sampling	• Design team member of several projects to design and develop interactive videodisc programs • Designed produced and evaluated land navigation and remedial tasks computer - based instruction developed on MICROTICCIT authoring and management system • Designed, supervised field tests; and managed numerous research projects for development of software and interactive video technology.
Data Collection and Data Management	• Directed the current data collection phase on project examining promising instructional practices that incorporate technology in working with students with disabilities • Using focus groups of adolescents, parents, teachers for use in instructional design of interactive videodisc

CAROLYN D. HARRIS (TECHNICAL)	
Topic Area	**Experience/Activities**
Qualitative Analysis Methods	• Case study evaluation to examine effective practices and processes examine effective practices and processes for technology implementation in schools. • Research and evaluation of the integration of military occupational and training data into sates computerized information delivery systems, and preparation of integration reports for selected states.
Training, Instructional Design	• Principal Investigator on Department of Education "Development of Interactive Videodisc Program for use by Mildly Cognitively Impaired Adolescents to Build Decision Making Skills Related to Risky Behaviors • Eleven years as a public school teacher • Extensive experience in developing instruction for special needs children and the development of computer software, videotapes and print packages, several of which have been published or are being evaluated for publication.
Technical Writing/Editing	• Developed design specification subsystem, including course catalog and training handbook for Air Force electronics basis skills programs • Incorporating in schools into Guidebook for Special Education Administrators. • Numerous training handbooks users manuals, instructions for skills training and videodisc programs.

Dr. John Hermann. Dr. John Hermann is a Macro research associate specializing in evaluation of health and human service programs. He has 17 years of experience developing training materials and evaluating program effectiveness. His varied training development efforts include international seminars on public narcotic awareness and correspondence course materials on social problems, cultural anthropology, medical sociology, research methodology, and probability and statistics. Dr. Hermann has assessed evaluation monitoring instruments, developed and pilot tested data collection instruments, wrote training packets for each instrument, and recommended evaluation strategy improvements. Prior to joining Macro, Dr. Hermann was a professor in the social sciences department at Columbia Union College. In addition to teaching responsibilities, he conducted a number of on-campus research projects including one longitudinal analysis of performance by students entering college on academic probation. Dr. Hermann received his Ph.D. in Social Welfare from the University of Maryland.

JOHN HERMANN (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Project Director for evaluation of the OSAP demonstration projects for youth at high risk for systems abuse; includes supervision of over 20 outside consultants. • Manager of HRSA cross-site assessment funded under Comprehensive Perinatal Care Program.
Research Design, Methodology, Sampling	• Specialist in evaluation of health and human services program. • Research methodologies on perinatal care study responsible for sampling and data analysis. • Developed evaluation strategy for ASPE SSA Research Demonstration Program.
Data Collection and Data Management	• As Director of the OSAP High Risk Youth, responsible for production of site visit reports and evaluations for 130 grantees nationwide. • Coordinated multi-site data collection for an NIMH Community Support Program.
Quantitative Analysis Methods	• Responsible for quantitative and qualitative analysis of 130 OSAP grantee programs for high risk youth, citing innovative approaches, and type and frequency of approaches used.

JOHN HERMANN (RESEARCH)	
Topic Area	**Experience/Activities**
Qualitative Analysis Methods	• Developed an evaluation strategy for SSA's Research Demonstration Program and assessed, evaluation plans submitted by grantee agencies, plan included process and outcome evaluation, pilot testing, recommendations, and strategies for the future.
Cost-Benefit and Cost-Effectiveness Analysis	• Co-managed NIMH project to evaluate a cost-outcome methodology for the Community Support Program. • Assessed the use of quality control data for program management improvement and the impact of policy change on program payment and client error rates for an ASPE, AFC and Medicaid project.
Training, Instructional Design	• Developed international seminars and a training course on public narcotic awareness and correspondence cause materials on social problems, cultural anthropology, medical sociology, research methodology, probability, and statistics. • Developed training packets for instruments used in the SSA Research Demonstration Program. • Developed correspondence courses and educational course materials in research and statistics as a faculty member at Columbia Union College.
Technical Writing/Editing	• Produced numerous research guides, guides for conducting meetings and presentations for the Bureau of International Narcotics Matters, U.S. State Department.

Ms. Helen Hopps. Ms. Helen Hopps has an extensive background in conducting ethnographic research among youth, street outreach and working with peer counseling programs. Ms. Hopps worked on the children's Outreach and Program Evaluation Project at the University of Maryland. Her job responsibilities include contacting and interviewing inner-city Latino street youth. She is also employed by the Latin American Youth Center, where she is responsible for program development and training for the peer counseling and street outreach programs. This work led to her article "Working with D.C.'s homeless Hispanic street kids," published in *Practicing Anthropology*, Vol. II, No. 2. Ms. Hopps holds her Master's degree in applied anthropology and has completed all course requirements for a Ph.D.

HELEN G. HOPPS (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Director of field research for Children's outreach and Program Evaluation (COPE)(OSAP-funded) • Director of the Institute for Policy Studies (IPS) Africa Project • Project Manager for Macro Systems, Inc. • Fieldwork Director for University of Maryland.
Research Design, Methodology, Sampling	• Evaluation plan of a 5-year OSAP community partnership grant. • Design of ACYF study on the underlying causes of youth homelessness.
Data Collection and Data Management	• Survey and household census for Legal Defense and Education Fund of N.A.A.C.P. • COPE project on homeless Hispanic street youth in Washington, D.C.
Quantitative Analysis Methods	• COPE project on homeless Hispanic street youth (statistical analysis) • Quantitative research as part of numerous other projects as needed in combination with role as ethnographer/evaluator.
Qualitative Analysis Methods	• As ethnographer, conducted numerous evaluative interviews and needs assessments. • Peer counseling program development and focus groups for Latin American Youth Center.
Training, Instructional Design	• As ethnographer at Latin American Youth Center. • Teaching Assistant at University of Maryland and teach for NYC public schools.

HELEN G. HOPPS (RESEARCH)	
Topic Area	**Experience/Activities**
Technical Writing/Editing	• Self-employed freelance writer and research for over eight years. • As ethnographer on numerous projects, demonstrated excellent technical writing and editing skills.

<u>Mr. Albert W. Irion</u>. Mr. Albert Irion brings more than 15 years experience with Macro. During this time he has participated in or managed a large number of projects, including work in research and evaluation; financial management, technical assistance, and management information systems; and facilities management, transition, and operations. He is also responsible for directing staff activity and for administering subcontract and consultant agreements, maintaining and monitoring budgets, and directing the development, implementation, and maintenance of a major database of training resources and needs. Mr. Irion received his M.S in Accounting from the Wharton School of Finance and Commerce.

ALBERT IRION (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Project manager on a study to develop improved budgeting techniques for ETA. • Project manager on a study to prepare a databook for HHS.
Research Design, Methodology, Sampling	• Served as a team leader in an analysis of computer system test results. • Project manager on a technical assistance assignment for CETA sponsors.
Data Collection and Data Management	• Project manager on a project for DOL to study uses of DOL programs by dislocated workers. • Participated in collection and analysis of data to evaluate alternative ESARS data validation methodologies.
Cost-Benefit and Cost-Effectiveness Analysis	• Determined the feasibility of identifying the lists of patient care for HHS. • Provided accounting on financial management assistance to Illinois and DC DOL.
Training, Instructional Design	• Project director on an assignment for the Department of Labor to develop and conduct technical assistance and training workshops. • Prepared report for DOL analyzing relationship between performance, workload, and resources in the Unemployment Insurance Program.
Technical Writing/Editing	• Prepared user documentation and training materials for an automated budget systems in Alaska.

<u>Mr. Clayton Jackson</u>. Over the last 25 years, Mr. Jackson, Banton International, has been responsible for the management, design, implementation, and operation of large computer facilities, communication networks, and applications for a wide variety of clients. Since joining Benton International in May 1984, Mr. Jackson has worked on numerous engagements that require unique systems management capability. He recently managed the design, development, and implementation of a high-speed IBM-based transaction switching system to integrate the teller and platform functions of merging financial institutions. Before joining Benton International, Mr. Jackson was Executive Vice President of First Interstate Services, the data processing affiliate of First Interstate Bancorp, where he was responsible for the design, implementation, and operation of First Interstate Bancorp's nationwide electronic delivery systems. He also served as Operations Chairman for the CIRRUS System and Architecture Chairman for Interlink. Mr. Jackson earned a BA in Mathematics from Whitman College and an MS in Computer Sciences from the University of Washington. He has been granted the Certificate in Data Processing from the Institute for Certification of Computer Professionals.

CLAYTON JACKSON (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Responsible for one of two technology sectors within BI. • Managed numerous banking/EFT systems design and development projects for financial institutions, systems vendors, and systems providers.
Cost-Benefit and Cost-Effectiveness Analysis	• Numerous technological/business evaluations of banking systems, operations, and technology strategy for first tier major financial institutions.
POS, EFT/EBT Technology and Practice	• Operations Committee Chairman - Formation of CIRRUS National ATM Network. • Architecture committee Chairman - Formation of Interlink POS Regional Network. • Specification of international POS and ATM networks for a major financial services company. • Qualified bidder for prime contractor for turnkey hardware and software EBT solutions for Oregon and Hawaii.

CLAYTON JACKSON (TECHNICAL)	
Topic Area	**Experience/Activities**
Financial Institution Practices/Procedures	• Design and development of a high speed transaction switching systems for merging systems operations of two major financial institutions. • EVP, First Interstate Bancorp, responsible for design, implementation, and operation of nationwide electronic delivery system.

Mr. Noshir Kathok. Mr. Noshir Kathok, an Executive Vice President with Benton International, has considerable experience in Electronic Funds Transfer systems that includes strategic, business, and financial analysis and planning; product program and management, including software project management; marketing; and engineering. He works extensively with shared ATM/POS networks in the U.S. and abroad, bank credit and charge card networks, supermarket and petroleum retailers, financial institutions active in developing and marketing EFT systems, and leading providers of EFT systems and processing services.

NOSHIR KATHOK (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Policy development and program management from concept to system implementation of a major regional shared POS and ATM network. This project included negotiation for a merger with a provider of transaction switching services. • Managed the TRW implementation of the J C Penney-VISA authorization systems link.
Research Design, Methodology, Sampling	• Conducted primary market research of retailer needs in the electronic transaction market.
Cost-Benefit and Cost-Effectiveness Analysis	• Developed several computer models for long-range business/financial planning and new venture analysis.
POS, EFT/EBT Technology and Practice	• Conducted a major analysis of structural and strategic EFT transaction pricing for both ATM and POS programs. • Developed a computerized business environment simulation model for the business analysis of ATM and POS programs. • Developed the channel distribution strategies for a new line of sophisticated retail point-of-sale systems products.

Mr. Clifford Kernohan. Mr. Clifford Kernohan, a Partner with Price Waterhouse, has twenty years of experience in the accounting field, and has provided service to clients in various industries including food service, food processing and retail, petroleum, high technology, and cable television. He has significant experience with unique accounting, auditing, reporting and business issues; acquisitions and mergers; complex costing systems; and issuing special reports under provisions of contractual agreements.

CLIFFORD KERNOHAN (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Audit partner with Price Waterhouse
Cost-Benefit and Cost-Effectiveness Analysis	• Certified Public Accountant with 20 years of experience
Retail Food Industry Practices/Procedures	• Saga Corporation - responsible for services to this food service/restaurant company, 1979 through 1987. Saga was acquired in 1986 by Marriott Corporation, at which time it operated approximately 1,300 separate food service and restaurant units. • Responsibility for smaller food service and restaurant clients and acquisition investigations of food service and restaurant companies.

Mr. John W. Lathrop. Mr. John Lathrop is currently a technical director at the Institute for Resource Development Inc. (IRD), Columbia, Maryland. He is a former Director of Contracts and Special Programs at the University of Maryland, University College, Center for Professional Development. Mr. Lathrop is skilled in all phases of the program development process; needs assessment; proposal development; program evaluation; financial management; budget preparation and control; marketing and promotion; faculty selection, training, and evaluation. He is a winner of two national awards for programming excellence and is the former president of a professional organization. Mr. Lathrop is a member of the continuing education advisory board at Howard University, Washington, DC. He has been a manager and staff trainer in the UMUC/CCL Leadership Development Program, and has designed and taught in the Critical Management Skills Program. Mr. Lathrop holds the equivalent of a M.A. in International Public Administration and Continuing Education, Syracuse University and is currently a candidate for an MGA degree in Corporate Human Resource Management, University of Maryland, Graduate School of Management and Technology.

JOHN W. LATHROP (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Technical director for Institute Resource Development • Director of Contracts and Special Programs for the University of Maryland. • Program Manager at the Center for Creative Leadership.
Training, Instructional Design	• Development and design of professional training programs for corporations, international governments, and associations. • AT IRD responsible for development and delivery of professional training programs and private sector clients domestically and abroad. • Designed and conducted management training for Saudi Arabia and for a U.S. intelligence agency in Germany and England.

Ms. Judith Leibowitz. Ms. Judith Leibowitz is an organization development specialist with the Institute for Resource Development (IRD) Ms. Leibowitz has approximately 15 years experience as a consultant, trainer, manager, and counselor. Since 1986, Ms. Leibowitz has served as adjunct faculty to American University. She is an advisor to students completing their graduate studies in Organization Development. Ms. Leibowitz serves on the Board of the Chesapeake Bay Organization Development Network, and served on the 1984 conference planning committee for Women in OD. She has also taken certification training in the Myers Briggs Type Indicator (MBTI) from Otto Kroeger Associates, and is a member of the Association of Psychological Type (APT). In addition to the MBTI, she is proficient at using the Leader Behavior Assessment (LBA), the Developmental Task Analysis (DTA), Fundamental Interpersonal Relations Orientation (FIRO), and the Management Excellence Inventory (MEI). Prior to joining IRD, Ms. Leibowitz was a senior consultant in the Human Resources Management Consulting Practice of Arthur Young & Company, Washington D.C. Office.

JUDITH LEIBOWITZ (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Project manager and trainer on contract with Navy Office of Civilian Personnel Management • Managed 40 professional and personal development programs for the NTL Institute human resource organizations.
Research Design, Methodology, Sampling	• Designed and conducted 3 facilitator training courses for the U.S. Navy • Designed developed and pilot tested a records management training program for the Department of Energy • Designed and facilities an experienced -based workshops about the dynamics OP organizational change in relation to automation and new technologies.
Data Collection and Data Management	• Administered survey and interviews for U.S. G.A.O. as an internal organization development consultant
Quantitative Analysis Methods	• Analyzed data for U.S. G.A.O. to design interventions for a regional office
Qualitative Analysis Methods	• Analyzing data feedback on the Myers Briggs Type Indicator and management excellence Inventories used by OPM in the Public Managers' Workshops and the Executive Women's Program.

JUDITH LEIBOWITZ (RESEARCH)	
Topic Area	**Experience/Activities**
Training, Instructional Design	• Senior organization development specialist in areas of organizational development, leadership and management training, team building and training trainers and facilitator. • Over past 4 years, has trained 225 Navy Managers in Leadership and management conducts conflict management, intergroup relations group redesign, and individual coaching and counseling of both managers and staff
Technical Writing/Editing	• Developing an instructor's guide, participant workbook for Department of Energy records management training program. • Wrote article on innovative learning approach designed for training federal financial managers.

Dr. Michael Livesay. Dr. Michael Livesay brings to this project his diverse experience in organizational analysis and technical management, with a solid background in research. Much of that work has focused on organizational structure and dynamics, especially in education, and on the assessment of project impacts. Dr. Livesay also has a strong background in program and line management. At the Southeastern Educational Improvement Laboratory, he supervised growth in systems and personnel as the lab increased from 7 to almost 50 staff, with corresponding growth in programs and demands on office automation and information management capabilities. For the Louis Harris Data Center at the University of North Carolina in Chapel Hill, Dr. Livesay managed a program to provide computing support, liaison, and dissemination services to researchers through development of data storage, retrieval and analysis systems on both microcomputers and mainframe computers. Earlier, he established and developed a social impact assessment program for a nonprofit research and consulting firm. Dr. Livesay earned his Ph.D. in anthropology from the University of North Carolina.

J. MICHAEL LIVESAY (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Project Manager for University of North Carolina, Institute for Research in Social Science. • Project Director for Evaluation of Integration of the Technology for Instructing Handicapped Students (for Department of Education (DOE). • Field Director for research project at UNC National Institute of Education.
Research Design, Methodology, Sampling	• Design research tasks for large DOE project. • Designed and developed information management systems and division of a regional education laboratory. • Developed technology assessment and social impact assessment research programs.
Data Collection and Data Management	• DOE Evaluation of Integration of the Technology for Instructing Handicapped Students. • Five years of ethnographic, historical, and organization research on social change.
Quantitative Analysis Methods	• Numerous skills applicable to work in and education research social service. Directed a study of consistency in the data collected by the UI quality control program. Data collection was carried out in six States for the Unemployment Insurance Service.

J. MICHAEL LIVESAY (TECHNICAL)	
Topic Area	**Experience/Activities**
Qualitative Analysis Methods	• Technical support and policy analysis for a program in educational technology. • Established and developed technology assessment and social impact assessment programs for a nonprofit policy research group.
Technical Writing/Editing	• As social and educational research, has demonstrated exemplary technical writing/editing skills on numerous projects. • Numerous publications.

Ms. Suzanne Loux. Ms. Suzanne Loux, a Macro technical director, has over 20 years of experience designing and directing large-scale national surveys, primarily with agencies that service the low-income population. Ms. Loux has served as survey director or project director for more than 25 projects. She is experienced in working with sampling statisticians in developing field procedures that meet the requirements of sometimes complicated sampling plans but that can be implemented by non-technical field staff. She has designed questionnaires for various populations--low-income, elderly, physically and mentally impaired, State and local agency personnel, and the general public. She has been responsible for developing all field procedures and survey schedules and assuring that the data collection team adheres to these. Ms. Loux holds a Master's degree in Sociology from the University of Pennsylvania.

SUZANNE LOUX (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Macro Technical Director. • Current project director for HUD quality control study. • Directed FNS study of expedited food stamps. • Directed over 25 projects in the area of social services, housing, alcohol, and other drug abuse, the elderly health.
Research Design, Methodology, Sampling	• Designed questionnaires, field procedures, forms, quality control process for numerous data collection projects. • Designed and implemented Montgomery County, Maryland study of social services needs by tenants. • Designed forms and procedures for HCFA medicaid recipient review project invoicing quality control re-reviews in four states.
Data Collection and Data Management	• Has managed large-scale mail, phone and onsite surveys and data collection using questionnaires, interviews, focus groups, case record reviews, observation, tracking. • Directed an onsite data collection at 60 local food stamp offices nationwide for FNS. • Directed a series of public housing surveys over a period of seven years.
Quantitative Analysis Methods	• Data analysis of seven nationwide longitudinal studies at public housing authorities, each involving up to 10,000 tenants and 132 public housing authorities.
Qualitative Analysis Methods	• Conducted evaluation of Community Energy Projects for ACTION. • Evaluated results of nationwide PBS "Tune-In" campaign, providing descriptive information and recommendations to 20 PTV stations.

SUZANNE LOUX (RESEARCH)	
Topic Area	**Experience/Activities**
Training, Instructional Design	• Developed training curriculum and materials, and conducted numerous national training sessions and workshops in data collection methodologies and procedures in such topic areas as food stamps; public housing; health; alcohol and other drug use; SSI, AFDC, and Medicaid, and energy.
Technical Writing/Editing	• Has written numerous final reports, data collection, pilot test, and training manuals, discussion guides, case study reports. • Coauthored report published by DOT concerning national understanding and acceptance of occupant protection systems.

Dr. Richard Mantovani. Dr. Richard Mantovani, a Macro consultant, has over 17 years of experience in evaluation research, decision support, statistical analysis and systems design in the health and human services fields. His background includes project management as well as technical support experience both as a consultant to the government and private sector clients, and in decision-support roles in the private sector. Dr. Mantovani has experience in project direction, aging and aging programs, health care, survey research, evaluation research, forecasting, and database development and statistical analysis. Over the last 10 years, he has been involved in the design and implementation of large tracking and statistical analysis systems. Dr. Mantovani received his Ph.D. in Social Relations and Quantitative Methods from the Johns Hopkins University.

RICHARD MANTOVANI (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• For the National Council on Aging (NCOA), directed various analyses relating to the government older worker employment and training program. • Directed a study to estimate government liabilities for beneficiaries of the DOL Black Lung Fund.
Research Design, Methodology, Sampling	• Developing strategic plan and marketing database for the Red Cross. • Evaluated several local service delivery systems for the elderly.
Data Collection and Data Management	• Supervising data collection for the Red Cross Hurricane and Earthquake response evaluation. • Performed demographic analyses that predicted future health care expenditures.
Quantitative Analysis Methods	• Analyzed energy data collection systems for the Department of Energy. • Analyzed participation and placement rates for older workers in Title V program.
Cost-Benefit and Cost-Effectiveness Analysis	• Managed studies relating to the financing of medical education.
Technical Writing/Editing	• Over twenty publications

Mr. John MacAllister. Since joining Benton International in January 1982, Mr. MacAllister has led or participated in many client projects involving issues of strategy, product and market profitability, and performance measurement criteria. He has also developed microcomputer-based simulation models for use by Benton International clients as tools for assessing risk and investment return.

Mr. MacAllister's prior experience includes ten years as a Vice President--Commercial Lending with Union Bank in Los Angeles, California, and four years as President and Chief Operating Officer of Spring Corporation, a fully integrated real estate sales, development, and services company in Los Angeles.

Mr. MacAllister is a frequent speaker at seminars sponsored by the U.S. Small Business Administration on the subject of bank financing and entrepreneurship. He holds a BS in Finance and an MBA from the University of Southern California. He is a candidate for a MSBA degree in Finance from the same institution.

JOHN MACALLISTER (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Design and implementation of a product profitability system for the retail banking division of a major West Coast bank. • Design and implementation of a customer profitability system for the trust and investment management division of a major bank.
Research Design, Methodology, Sampling	• Development and implementation of a new strategic plan for the trust department of one of the nation's largest thrifts.
Cost-Benefit and Cost-Effectiveness Analysis	• Assessment of the strategic and economic benefits derived from a switching client's entry into the terminal-driving business.
POS, EFT/EBT Technology and Practice	• Economic value assessment of an acquirer ATM switch on behalf of the acquirer ATM switch. • Identification and evaluation of shared transaction switching options for a major U.S. ATM and POS switch.

JOHN MACALLISTER (TECHNICAL)	
Topic Area	**Experience/Activities**
Financial Institution Practices/Procedures	• Implementation of a modeling process to help a statewide subsidiary franchise of a money center bank define cost-effective alternatives to its present retail distribution system. • Design and leadership of a study to analyze how non-interest expense is managed in six major banks. • Design and implementation of a strategic and financial analysis process to evaluate the worth of a major West Coast bank's merchant services and credit card businesses.

<u>Mr. Donald Moehrke</u>. Don Moehrke has more than 25 years of experience in the data processing industry. He has held line and staff positions in the development and operation of computer systems for manufacturing, distribution, and financial industry systems, including the development of the leading EFT switch software. He has worked closely with IBM and Tandem Computers and was involved in the early development of database and productivity systems. Mr. Moehrke developed and evaluated Requests for Proposals for several networks and large grocery retailers for switching systems and services as well as in-store systems. As Vice President, International, he developed exclusive marketing relationships with IBM for the Connex products in Canada and the Asia-Pacific countries, as well as a non-exclusive marketing relationship in the U.S. He also managed other distributor relationships in the U.K. and Europe and provided consulting worldwide on the Connex products. Mr. Moehrke holds BS and MS degrees from the Sloan School of Management at the Massachusetts Institute of Technology. He has been a frequent speaker at national and international data processing organizations. He holds a Certificate in Data Processing and has been a local officer in the Association for Computing Machinery and The Institute of Management Sciences.

DON MOEHRKE (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Vice President, Product Management. Guided product evolution and managed consulting staff responsible for prospect presentations and proposals.
Quantitative Analysis Methods	• Helping data-servicing organizations evaluate market trends and value business, both from seller's and buyer's perspectives. • Performed the initial analysis that took A.O. Smith into the banking and EFT industry.
Qualitative Analysis Methods	• Reviewing security of networks and certification of hardware encryption devices and terminals.
POS, EFT/EBT Technology and Practice	• Aiding in the formation and merger of EFT networks in the U.K. and South America.
Retail Food Industry Practices/Procedures	• Developing and evaluating RFPs for several networks and large grocery retailers for switching systems and services. • Developing requirements and design of systems for delivery of Electronic Payments at grocery Point of Sale.

DON MOEHRKE (TECHNICAL)	
Topic Area	**Experience/Activities**
Technical Writing/Editing	• Designed and managed the development of discrete parts manufacturing software, as well as the implementation of two high-speed database management systems.

Ms. Cynthia Holmes Morgan. Ms. Cynthia Holmes Morgan, a Macro senior manager and case study expert, has extensive experience and expertise in the design, conduct, and analysis of case studies. In the past year alone, she has been responsible for 11 site visits. Ms. Morgan has developed special expertise around programs serving low-income and minority populations. She has first-hand experience working with demonstration projects. Ms. Morgan received her M.S.W. degree in Administration from Florida State University.

CYNTHIA MORGAN (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Project manager of a study to strengthen DHHS grantee evaluation plans. • Project manager on an analysis of AIDS prevention program.
Research Design, Methodology, Sampling	• Led a study team that analyzed an abstraction of project summaries to determine effectiveness of AIDS prevention programs.
Data Collection and Data Management	• Conducting site-visits and interviewing local recipients for a study of welfare programs and drug-exposed children.
Quantitative Analysis Methods	• Conducted an analysis of HIV infection and foster care children which projected future New York health care needs.
Qualitative Analysis Methods	• Conducting an extensive literature review on case-management and its relationship to self-sufficiency programs. • Conducted an on-site qualitative process analysis of prenatal care programs for HRSA.
Training, Instructional Design	• Project manager of a program for DHHS that will provide workshops to program grantees.
Technical Writing/Editing	• Project manager on a project to provide technical assistance to demonstration projects for DHHS.

Mr. Joseph Motter. Mr. Joseph Motter brings more than 13 years experience in the assessment, conduct, and evaluation of health programs and policies and health promotion efforts. For the past 5 years, he has served as manager of Macro's task order contract with the U.S. Department of State, Bureau of International Narcotic Matters. Mr. Motter received his M.P.A. in Public Affairs from the University of Texas.

JOSEPH L. MOTTER (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Technical Director for Macros Systems, Inc. • Manager for Macro's drug abuse demand reduction consulting, training, and technical services to the U.S. Department of State, Bureau of International Narcotics Matters (INM). • Directed development of manuals and training courses.
Research Design, Methodology, Sampling	• Designed plan to test approaches for providing mental health services to minority populations. • Developed survey of forensic mental health services.
Data Collection and Data Management	• National Drug and Alcoholism Treatment Utilization Survey. • In-depth knowledge of all aspects of large-scale management information systems, including data collection and management.
Qualitative Analysis Methods	• Evaluation of new community-based alcoholism detoxification facilities in Connecticut. • Numerous site visit evaluations. • Assessment of Quality control procedures in HHS.
Cost-Benefit and Cost-Effectiveness Analysis	• Demonstration test of cost benefits of expanding Medicare mental health coverage. • Public Health Service offset analysis of the Medicare Mental Health Demonstration Evaluation.
Training, Instructional Design	• Briefings and training for drug abuse prevention workers in more than 30 countries. • Coordinator of team to provide nearly 200 training sessions for health professionals and others. • Developed nine demand reduction training courses and coordinates deliver.

JOSEPH L. MOTTER (RESEARCH)	
Topic Area	**Experience/Activities**
Technical Writing/Editing	• Drug abuse prevention manuals • Excellent writing and editing skills as demonstrated on numerous projects.

Ms. Louise Peloquin. Ms. Louise Peloquin is the manager of the Health Professional Training Component of the National Training System (NTS). She develops, coordinates, and assists with implementations of training in AOD prevention to physicians, nurses, and mental health professionals. She also delivers drug abuse training in prevention, communications skills, public awareness, and program planning in the international arena--Nigeria, Israel, and Greece. Previously, Ms. Peloquin was employed by the University Research Corporation, where she was a trainer for health communication in a social marketing program. She offered training in regional meetings for OSAP on how to develop communication plans for AOD projects in communities around the country. Ms. Peloquin received her Master's degree in Educational Psychology from Washington University.

LOUIS PELOQUIN (RESEARCH)	
Topic Area	Experience/Activities
Research Design, Methodology, Sampling	• Created, implemented and evaluated regional education and community programs in maternal and child health. • Developed a marketing plan for NCCE.
Qualitative Analysis Methods	• Develops, coordinates, and assists with implementation of training in AOD prevention.
Training, Instructional Design	• Delivers drug abuse training in prevention, communication skills, public awareness, and program planning in the international arena. • Served as training for health communication in social marketing program. • Organized a peer health training program for the Girl Scouts. • Responsible for planning, coordinating and managing community and client training activities for Planned Parenthood. • For DC Department of Health, organized and implementation community-based health care programs.

Dr. George Reinhart. Dr. George Reinhart has over 16 years' experience in evaluation research, data collection techniques, research methodology, and applied statistical analysis. In the course of his work, Dr. Reinhart routinely oversees development of survey instruments, and implementation of both large- and small-scale interviews. He has authored or co-authored nearly 50 journal articles, monographs, and research reports in the areas of evaluation, substance abuse, behavioral medicine, aging, and other areas of the social and behavioral sciences. Dr. Reinhart received his Ph.D. in Sociology from the University of Georgia.

GEORGE REINHART (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Research and Evaluation Director of the NIDA Evaluation of AIDS outreach/Pregnant Women and their Children Demonstration Program. • Manager OSAP cross-site evaluation of demonstration program for pregnant and postpartum women and infants. • Project Manager for NIAAA Study to develop in Alcohol Policy Analysis System
Research Design, Methodology, Sampling	• Plan and develops cross-site outcome evaluations to systemize and centralize data collection, data aggregating data processing and data analysis for major project. • Plans and implements process and outcome evaluation for the project for Counselor Training to 5,000 counselors. • Serves as director of evaluation and designs evaluation methodology for community - based project to overcome barriers to drug abuse treatment.
Data Collection and Data Management	• Research Director for NIDA study of 2,700 HIV drug abusers and their associates. Involved 20 focus groups • Responsible for data collection and analysis for several NIDA - sponsored multi-site data collection projects.
Quantitative Analysis Methods	• Task leader for prevalence analysis for NIAAA survey to assess prevalence for alcohol and other drug abuse and dependency in short-term hospitals (20,000 patients). • Directed evaluation of 4-phase model intervention program of AIDS outreach to IV drug abusers and their sexual partners

GEORGE REINHART (RESEARCH)	
Topic Area	**Experience/Activities**
Qualitative Analysis Methods	• Conducting data analysis for NIDA AIDS Initial Assessment and Follow-up assessments as well as a number of instruments to monitor client intervention, referral, services, and medical history data. • Conducting a cross site evaluation and data analysis of OSAP demonstration program for pregnant and postpartum women and infants
Cost-Benefit and Cost-Effectiveness Analysis	• Evaluation specialist on NIM study of the cost outcome for treatment of the chronically mentally ill, examining cost and outcome for a variety of treatment modalities in 6 sites using logistic regression models.
Training, Instructional Design	• Directs the process and outcome evaluation for the National Substance Abuse Counselor Training program for a estimated 8,400 persons in 700 training sessions in each of 3 years
Technical Writing/Editing	• Authored or co-authored 50 journal articles, monographs and research reports evaluation, substance abuse, behavioral medicine, aging, and other areas of social and behavioral sciences.

__Dr. Pedro Saavadra__. Dr. Pedro Saavedra, Macro International, has more than 10 years of experience as a sampling statistician and statistical analyst. He is skilled in statistical methods and if fluent in SAS. Dr. Saavedra has worked as a sampling statistician in a variety of projects. In addition to his sampling work, Dr. Saavedra has acted as chief statistician in a number of projects. He is an expert in survey design, estimation techniques, multivariate analysis, experimental design, factor analysis, error-prone modeling, multiple linear regression and other techniques. He is very familiar with SAS and SPSS, and has conducted statistical analyses using OSIRIS, BMDP, Basic, Lotus and other languages and packages. Many of his major contributions have been at the interface of statistics and computing. A former high school teacher, Dr. Saavedra also taught Adolescent Psychology at Loyola University of Chicago, where he was an Assistant Professor. He also has extensive experience in survey sampling and statistical programming and has developed models using multiple linear regression, logit analysis, discriminant function analysis, canonical correlation, factor analysis, sequential search, weighted least squares, principal components analysis, and other techniques. He has managed databases of over 200,000 records and has contributed to several publications related to school health. Dr. Saavedra received his Ph.D. in Educational Psychology from the University of Virginia.

PEDRO J. SAAVEDRA (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• As senior associate at Macro, has been responsible for managing major components of projects including numerous engagements for the Energy Information Administration (EIA).
Research Design, Methodology, Sampling	• Sample of gasoline retailers for EIA. • Modified and implemented design (including sampling draw) for EIA-782B. • Sampling plan for a study of local WIC agencies for FNS.
Data Collection and Data Management	• Developed and maintained sample databases for analytic purposes for the Pell Grant System. • Has managed databases of over 200,000 records.
Quantitative Analysis Methods	• Has developed models using multiple linear regression, logic analysis, discriminant function analysis, correlations, factor-analysis, sequential search, weighted least squares, principal components analysis, and other techniques.

PEDRO J. SAAVEDRA (RESEARCH)	
Topic Area	**Experience/Activities**
Cost-Benefit and Cost-Effectiveness Analysis	• HUD estimates of costs associated with procedural errors in recertification of Section 8.
Technical, Instructional Design	• Assistant Professor at Loyola University and extensive other teaching experience.
Technical Writing/Editing	• Skills demonstrated on numerous engagements through effective communication of technical ideas.

Mr. Donal D. Semler. Mr. Donal Semler, an Associate with Electronic Strategy Associates, has extensive experience with ATM, EFT, and POS technology. Prior to his employment with ESA, he served as President of three consulting firms, and Vice-president to three others. Mr. Semler has attended and completed advanced schools under IBM training programs, as well as the Executive Management Program at Penn State University. He received his B.A. in Marketing and retailing at Michigan State University.

DONALD SEMLER (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Managed a project to interface two switching networks.
Research Design, Methodology, Sampling	• Developed a project plan for a project to utilize smart cards and other lending edge technology.
POS, EFT/EBT Technology and Practice	• Managed implementation of Norwest's on-line ATM system. • Managed a large POS pilot designed to determine costs and benefits of POS. • Directed a large POS project for a major back.
Financial Institution Practices/Procedures	• Assisted a major bank in implementing the VISA program. • Functional as IBM's liaison to a large multi-bank holding company to plan and implement centralization of data systems.

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DONALD SEMLER (TECHNICAL)	
Topic Area	**Experience/Activities**
Training, Instructional Design	● Developed a new file structuring and accessing techniques and instructed classes on these techniques. ● Developed and taught project management and software estimating techniques. ● Developed and taught strategic planning courses.
Technical Writing/Editing	● Author of numerous articles printed in regional and national publications.

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Ms. Christine Snyder. Ms. Christine Snyder, a Partner with Price Waterhouse, has over fifteen years of experience in internal and EDP audit management and information security consulting. She has managed and conducted financial, operational, and EDP audits, and has established EDP audits functions from the development of mission statement to implementation of computer assisted audit programs. She has managed and conducted technical audits for the telecommunications industry, and has served as a financial systems consultant. Prior to her employment with Price Waterhouse, Ms. Snyder served as the Senior EDP audit manager for Black and Decker and as a Section Chief for AT&T Technologies.

CHRISTINE SNYDER (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Managed a data security engagement for a major airline • Partner with Price Waterhouse's Southeast Region computerized Information Systems Audit and Business Services Practice
Research Design, Methodology, Sampling	• Managed and performed a review of the implementation of access control software for a large government agency
Data Collection and Data Management	• Responsible for establishment of EDP Audit function and administration of audit activities for a Fortune 500 manufacturing • Managed a third party review of a credit and processing center
Quantitative Analysis Methods	• Performed pre-and post-implementation audits of Accounts Payable System • Performed computer - controls review encompassing an assessment of the general
Qualitative Analysis Methods	• Evaluated quality of work in an Quality Assessment Review of the internal audit function of a large manufactures of grocery products
Cost-Benefit and Cost-Effectiveness Analysis	• Developed system and computer plans for a major airline.
Training, Instructional Design	• Has implemented numerous systems and has been responsible for assuring client knowledge and training

CHRISTINE SNYDER (TECHNICAL)	
Topic Area	**Experience/Activities**
Technical Writing/Editing	• Managed a large engagement for a professional organization to update and extend the premier publication on the audit and control of automated systems, System Auditability and Control Report

Mr. Robert Stearns. Mr. Robert Stearns is a Senior Systems Analyst with state-level experience as director of data processing for a human services agency. Mr. Stearns is currently assisting BCA data system projects in Oklahoma and West Virginia. In addition, he is developing private sector database applications including point-of-sale, inventory and payroll systems.

ROBERT STEARNS (MANAGEMENT)	
Topic Area	Experience/Activities
Project Management	• Manager of Data Processing for the State of South Carolina Department of Social Services. • Project Director to create and implement an automated information system for the state of West Virginia's WIN program.
Research Design, Methodology, Sampling	• Consultant to Quality Planning Corporation on the project to develop a system concept and a pilot project design for the Louisiana WIC Program. • Project Director on the Analytic Systems, Incorporated contract to assist West Virginia in the development of a Social Services Information System.
Data Collection and Data Management	• Founder of the South Carolina State Data Processing Manager's Association to foster greater efficiency in the handling of state data bases.
Quantitative Analysis Methods	• Statistical programmer on several Job Corps success rate studies.
Qualitative Analysis Methods	• Consultant to Franklin C. Fetter Community Health Center, Charleston, SC to upgrade and improve the center's comprehensive, computerized Public Health information system.
Training, Instructional Design	• Project Director to develop manuals and conduct training for many of the Department of Labor's manpower programs; CEP, OIC, WIN.
Technical Writing/Editing	• Consultant to Analytic Systems, Incorporated to develop a WIC information system self-evaluation guide and review program management.

Dr. Stephen Stollmack. Dr. Stephen Stollmack is a Senior Operations Research Scientist with extensive health and social service program experience. Dr. Stollmack is currently leading the design of the New York WIC food cost forecasting system. Dr. Stollmack is also assisting the District of Columbia's Office of Criminal Justice Plans and Analysis evaluation of various substance abuse training and intervention programs.

STEPHEN STOLLMACK (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• President, Analogs, Inc. Led projects which developed a methodology to evaluate Medicare reimbursements, developed statistical methods for detecting fraud and abuse in the WIC Program, and evaluated efforts by State correctional systems to meet physical, health, safety, and management standards. • Vice President, Maximus, Inc. Directed projects which projected the need for Neurologists for the President's Commission on Epilepsy and developed a methodology for estimating alcohol prevalence. • Special Assistant, U.S. Department of Health, Education and Welfare. Coordinated research and demonstration projects in Medicaid, Income Maintenance, and Social Services.
Research Design/ Methodology	• Consultant, Allen Division, CAE-Link Corp. Developing human reliability growth models for predicting soldier performance. • Senior Analyst, Applied Management Sciences. Assessed system reliability for the FBI's semi-automated finger-print processing system.
Data Collection and Data Management	• Consultant, National Cancer Institute. Evaluated the degree to which seven of NCI's databases and scientific publications were achieving reasonable penetration rates, impacts, and user satisfaction levels. • Consultant, Nancy Low Associates, Inc. Analyzed nine separate surveys administered to cancer researchers and physicians to determine their awareness, use, and satisfaction with National Cancer Institute publications.
Quantitative Analysis Methods	• Consultant, JWK, Inc. Designed and developed SIMSCRIPT simulation of the U.S. Army's recruitment program.

STEPHEN STOLLMACK (RESEARCH)	
Topic Area	**Experience/Activities**
Qualitative Analysis Methods	• Research Director, D.C. Department of Corrections. Developed prison population models and new methods for evaluating rehabilitative programs based on recidivism data. • Consultant, Allen Division, Singer, Inc. Evaluated the DX164 trainer for the TOW 2 missile. • Senior Analyst, Science Applications International. Developed approaches for minimizing default rates and increasing collections of student loans. Evaluated State efforts to reduce errors in their Food Stamp Programs.
Cost-Benefit and Cost-Effectiveness Analysis	• Consultant, JWK International, Inc. Created an interactive forecasting model to evaluate costs and the effectiveness of training USAF pilots for low altitude missions. • Consultant, Synergy, Inc. Evaluated models that measure the relative cost effectiveness of proposed modifications to USAF aircraft systems. • Consultant, Caliber Associates, Inc. Developed a LOTUS-based breakeven model for balancing the expected costs of alcohol-treatment and possible recidivism.
Technical Writing/Editing	• Adjunct Professor of Statistics and Operations Research, Virginia Polytechnic Institute. • Research Associate, Ohio State University. Developed various simulation models.

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Ms. Elizabeth Sundberg. Ms. Elizabeth Sundberg, a Macro research associate, has over 17 years of experience in survey and social science research, evaluation, data collection and management. Ms. Sundberg has supervised both large and small-scale data collection in such diverse areas as social service programs, education, AIDS, drug abuse, civil rights, energy, and transportation for both public and private agencies and organizations. Ms. Sundberg has extensive experience in training data collection staff, interviewing, and all facets of mail, telephone, and on-site data collection. She has designed and pilot-tested survey instruments, forms, and procedures. She is very experienced in contacting local agencies (e.g., food stamp offices, welfare agencies, State and local school officials) to obtain information and to recruit such agencies for participation in research studies. She holds a Master's degree in Latin American Studies and International Relations from Indiana University.

ELIZABETH SUNDBERG (RESEARCH)	
Topic Area	Experience/Activities
Project Management	• Project director for a two phase evaluation of repellant formulations for the U.S. Army. • Field data manager on a HIV infection study for the National Institute on Drug Abuse.
Research Design, Methodology, Sampling	• 17 year of experience in survey research data collection. • Designed research plan for Army repellant study.
Data Collection and Data Management	• Responsible for data collection for a 5-year youth risk behavior study. • Survey specialist for a Quality Control Study for HUD. • Survey coordinator for Mathematica.
Quantitative Analysis Methods	• Survey specialist and field coordinator for the Evaluation of Expedited Service in the FSP for USDA. • Telephone survey supervisor for the NUAOPSS study for the National Highway Traffic Safety Administration.
Qualitative Analysis Methods	• Completed a literature review of state corrective action plans, project summaries and statistics for an AFDC study.
Training, Instructional Design Analysis	• Developed training materials for a Medicaid Quality Review Study.

ELIZABETH SUNDBERG (RESEARCH)	
Topic Area	**Experience/Activities**
Technical Writing/Editing	• Ongoing writing, evaluation, and editing support of the Office for Substance Abuse Prevention.

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Mr. Bert Tobin. Bert Tobin, Benton International has over 20 years of experience both building and managing a number of pioneering systems in the electronic transaction services, financial services, and municipal resource management industries. Mr. Tobin's recently performed a major business case analysis of a potential ATM strategy for a top brokerage company. The study included market, geographic, and cash flow analysis, as well as functional design and implementation recommendations. Mr. Tobin holds a BS in Economics from the Wharton School of Business and attended graduate school at New York University, School of Business. He has been the chairman of numerous ANSI committees and American Bankers Association sub-committees, and has represented the U.S. as a delegate to ISO, where he worked extensively on the global credit and debit card standards that exist today.

BERT TOBIN (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Automating the physical plant and equipment of an entire municipal township, including the design and implementation of scheduling, inventory, vehicle maintenance, waste incineration, job cost control, and labor analysis systems.
Data Collection and Data Management	• Developing the entire marketing data base for a card company using new system applications that marry PCs to mainframes without file downloads.
Quantitative Analysis Methods	• Performed a major business case analysis of a potential ATM strategy for a top brokerage company. The study included market, geographic, and cash flow analysis, as well as functional design and implementation recommendations.
POS, EFT/EBT Technology and Practice	• Planning the functional design of a switch for a large card company. The switch was designed to handle POS and ATM processing transactions as well as link existing regional and institutional ATM systems. • As Vice President of Retail Planning Division for Chase, he designed and installed the first debit card, the Chase debit card, with 1.5 million users. He also planned and directed the nation's first on-line ATM efforts.
Financial Institution Practices/Procedures	• Developed and installed on-line card authorization systems and was responsible for the first major POS system using magnetic stripe in 1970. • Developing a micro-based, user-defined, prompt-driven software package for a major equipment communications company. This system allows for the rapid customization of on-line retail banking systems.

<u>Ms. Linda Yates</u>. Ms. Linda Yates is a Senior Policy Analyst with staff and consultant level experience in food and nutrition programs, including several years in the U.S. Department of Agriculture as a program specialist. Ms. Yates is currently assisting BCA data system projects in Oklahoma and West Virginia. In addition, Ms. Yates is assisting in BCA's design of a WIC food cost forecasting system in New York. Finally, she is providing consultation services to a national study of WIC retail vendor compliance.

LINDA YATES (TECHNICAL)	
Topic Area	Experience/Activities
Project Management	• Family Nutrition Program- Lead Reviewer for the special One Tier Quality Control Project conducted statewide in North Carolina.
Research Design, Methodology, Sampling	• Conducted on-site reviews of USDA administered or funded local school lunch, child care, and summer food service programs for children in eight states.
Data Collection and Data Management	• As unit leader for food delivery subsection, initiated review, analysis and/or modification of ten WIC automated data processing systems in eight states.
Quantitative Analysis Methods	• Currently supporting information system requirements definition effort for the West Virginia WIC Program and contributing to the development of a WIC food cost forecasting model for New York. • Consultant, Applied Management Sciences. WIC Vendor Issues Study: to measure the incidence and prevalence of retail abuse in the WIC Program. • Consultant, Research Triangle Institute. Under contract to USDA-FNS to conduct the "Food Stamp Program Integrity Methodological Feasibility Study."
Qualitative Analysis Methods	• Consultant, USDA-FNS, Office of Analysis and Evaluation. Planned and conducted evaluation of the Farmers' Market Coupon Demonstration Project.
Training, Instructional Design	• Regional WIC coordinator. Published The WIC Papers, a comprehensive guide to best merchant management practices. • While responsible for Regional policy related to the child care food program, wrote "The Family Day Care Administrative Handbook."

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LINDA YATES (TECHNICAL)	
Topic Area	**Experience/Activities**
Technical Writing/Editing	• Consultant, Florida Department of Health and Rehabilitative Services. Developed and wrote The WIC Files, a volume of WIC vendor and participant investigative case studies. • Researched and wrote feasibility study on federal regulation of retail grocery stores.

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2. Class II

Felix Addo. Mr. Felix Addo, a Manager with Price Waterhouse, is a human services program specialist. He brings extensive knowledge of the internal workings of state human service agencies and service providers and of the budgetary and fiscal issues they face. Prior to joining Price Waterhouse, Mr. Addo served as the Director of the Office of Budget and Fiscal Services for the Maryland Child Support Administration.

Mr. Addo has over ten years of experience as a public accountant and has completed numerous accounting projects for Federal and State clients, including performance audits of both the Philadelphia and Washington D.C. Human Service departments. Mr. Addo also served as an internal auditor for the Department of Labor responsible for developing and conducting operational plans arising from audit exceptions.

Mr. John Appleman. Mr. John Appleman, a Senior Manager with Price Waterhouse, has extensive experience in all phases of systems development, including strategic planning; requirements definition; system design; programming and testing; software package selection and implementation; project management; functional department management; systems review and design; and profitability improvement. He recently managed systems development for a $5 billion, 65 branch financial institution. Mr. Appleman's tasks included directing applications development, end user computing, capacity planning, and administrative support. He has also assisted in implementation of EBT systems, as well as managed projects in other custom systems development. Mr. Appleman received his M.B.A. in Finance and Quantitative Methods at Boston University.

Maria Arminio. Maria Arminio specializes in business planning, competitive analysis, and the evaluation of payment systems, products, services and technologies. Since joining Benton International in 1978, she has conducted research and consulted extensively for the financial and retail industries in such areas as POS/debit programs, ATM networks, and retail operations. She plays a major role in the design and execution of Benton's market research activities in payment systems.

Ms. Arminio holds a BA in Marketing from the University of Notre Dame and an MBA from Loyola Marymount University. Before joining Benton International, she held sales, marketing, and management positions with NCR Corporation and with Telescribe in Los Angeles. She has authored or co-authored more than 90 publications in the areas cited above, including study results published in the report by the U.S. Congress, Office of Technology assessment, Effect of Information Technology on Financial Services Systems (September 1984).

Ms. Karen Ball. Ms. Karen Ball, a Manager with Price Waterhouse, specializes in service improvement and workload analysis. Ms. Ball brings to the project team experience as a key analyst on the Price Waterhouse study of Oklahoma's Children and Family Services System. Ms. Ball interviewed several top state agency officials and legislators and conducted an in-depth literature review. In addition, Ms. Ball has served as lead analyst and Assistant Project Manager on several projects requiring the design of detailed survey tools for social and human service programs at the state level, including the Texas Central Education Agency, the Virginia Department of Education, and the North Carolina Board of Education.

__Karen Brown__. Ms. Brown, a Senior Consultant at Benton International, has wide experience in banking and data processing. She specializes in project management, settlement functions, and user training. Her project management experience is in large scale EFT/ATM/Teller networks and card products, from the project viability assessment phase through the post-implementation review. Her focus in funds settlement included the development/enhancement of procedures and forms to support the settlement function for individual ATMs/Tellers, ATM/Teller systems, and interchange activity with other networks. Her expertise in training spans the development and implementation of large scale (e.g., 1,500 tellers nation-wide) training programs.

Ms. Brown's experience before joining Benton International includes twelve years of banking and eight years in data processing for one of the top ten U.S. banks. Her professional assignments included: ACP Processing Manager for system development and maintenance in a multi-user switch facility, Manager of User Training for an on-line teller and ATM system, Project Manager directing the development and installation of EFT (paperless) teller support in a branch environment, and Project Manager directing the development and installation of a full in-house credit card authorization system.

Ms. Brown was a key participant in developing Benton International's bid to be a prime contractor for the Hawaii and Oregon experiments.

__Andy W. Coburn__. Andy Coburn's background includes twenty-three years of experience in systems programming on IBM equipment, the last thirteen of which were spent designing and implementing SNA networks under MVS and MVS/XA. He has designed and coded more than 15 major VTAM application programs (including LU 6.2), and is an internationally recognized expert in this field.

Since joining Benton International, Mr. Coburn has worked with a major EFT software supplier. His principal project has been designing and programming all the VTAM interface modules for a major EFT product. He has proposed improvements to the overall design of the product which resulted in a 200% increase in throughput. Additionally, Mr. Coburn traveled to Europe and Canada on numerous occasions to participate in the sales effort for the software, and had the opportunity to implement full X.25 support and to design an implementation for the support of OSI.

Mr. Coburn received a Bachelors degree in Music from Westminster College, Salt Lake City, Utah.

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Mr. Rafael F. Delgado. Mr. Rafael Delgado currently serves as a senior systems analyst on all of Macro's activities in Software Testing and Quality Assurance. On multiple projects he has assumed lead roles in conducting system requirements analysis; developing test plans and quality assurance plans; selecting automated software testing tools; conducting subsystem, system and integration testing; and evaluating system performance and quality control operations. He has gained system development, quality assurance and software testing experience in IBM mainframe, personal computer and HP minicomputer environments. His primary responsibilities include project and task management; development of management and technical plans; general staff administration and employee training in software quality assurance.

Mr. Delgado is the deputy project manager for Macro's activities on the Pell Grant Central Processing System (CPS) project for the Department of Education, under a subcontract to National Computer Systems, Inc. Macro is responsible for requirements analysis, software testing and quality assurance, management information systems design and integration testing of all components of the Pell delivery system. For the past eight years he has assumed lead roles in all phases of this project. His responsibilities include evaluation of quality control operations, coordination of the certification testing of MDE/NAS organizations, development of test plans and quality assurance plans and development of software testing tools. He has also participated in software testing for the Pell Grant Electronic Gateway to develop a communication network for the transmission of applicant information, in a testing review of the Pell Grant Disbursement System and in a quality control study to evaluate the Pell Grant application data input process and the related quality control procedures.

Mr. Delgado earned his M.B.A. in Information Systems Management from George Washington University. He is also a Certified Quality Analyst.

Ms. Beverly Dietrich. Ms. Beverly Dietrich, a Senior Manager with Price Waterhouse, has over ten years of experience with operations and application systems in financial institutions. She was responsible for overall management of a large engagement to provide systems and procedures for a Special Asset organization. Additionally, Ms. Dietrich provided assistance to top management on a regular basis to ensure a successful start-up operation. Other project tasks under her supervision included: design and development of an asset management system; enhancement and installation of a cash recovery system which allowed management to forecast income, expenses, and collections; installation of a recovery system; development of policies and procedures for Loan Operations and Credit Administration (including training

and operations review). Ms. Dietrich has been responsible for the development and maintenance of all application systems, and has directed the activities of a corporate data processing operation for a regional bank.

Ms. Mary Garvin. Ms. Mary Garvin, a Senior Manager with Price Waterhouse, specializes in statistical analysis and modeling, sampling, and quality control. She has served on numerous tasks to provide statistical support to the Department of Energy on surveys of product sales. For these projects, Ms. Garvin has completed tasks including modeling of alternative data collection procedures, sampling design, analysis of survey data and survey research techniques, and software development. For the Veterans Administration, she directed a validation of the methodology for statistical quality control of over $14 billion in compensation, pension, and education benefits in VA programs. The review focused on issues involving methods for quality measurement, sample sizes, sample design, quality standards, accuracy of quality measurements, program costs and benefits, and sample selection techniques.

Mr. Brian Goodhart. Mr. Brian Goodhart, a Senior Manager with Price Waterhouse, has over thirteen years of experience in data processing and information systems, and has conducted engagements for Federal, State, and private sector clients. He has worked in all components of the systems development life cycle, including strategic systems planning, project management, and systems design, construction, and implementation. Mr. Goodhart recently served as project manager on an engagement to develop a financial systems master plan for the state of North Carolina. He also served as a technical manager on an engagement to update the Federal government's telecommunications and billing system. Mr. Goodhart's tasks included development of a conceptual data model and input procedures, and preparation of an RFP for hardware and software acquisition for the telecommunications system.

Mr. Cornell Hills. Mr. Cornell Hills, a Senior Manager with Price Waterhouse, has over sixteen years of experience in management systems, including micrographics and electronic imaging, case management, and records management. He has performed all phases of large scale project implementation, including requirements analysis, system and vendor selection, vendor oversight, document preparation, coding, data base administration, and user support and training. Mr. Hills recently completed a study for First Florida Bank to determine the feasibility of using electronic imaging technology for its development of a centralized loan file management and disaster recovery program. Mr. Hills conducted an analysis of

document composition, conversion, and workflow issues. He also conducted in-depth interviews with bank personnel and attorneys.

Mr. Raymond L. Hipsher. Mr. Ray Hipsher has been involved in EDI systems design, development implementation and maintenance for proprietary and standardized programs since 1980. He has extensive experience in standards development, project management, systems integration and application enhancement. He has spoken on EDI to numerous groups and one Electronic Funds Transfer (EFT) to government, corporate and financial groups. Mr. Hipsher is the Chairman of the Government Project Team of (ANSI) ASC x12 Standards Association, the Executive Committee of ANSI ASC x12 and as Delegate to the North American International EDIFACT Board. He has five years of EDI standards development experience and has worked with government, health care and aerospace industry groups.

Mr. George Hogeboom. Mr. Hogeboom, a Senior Manager with Price Waterhouse, is a data processing specialist with over eleven years of experience in management, analysis, design, development, conversion, and re-engineering of financial and management information systems. He has provided service to both Federal and state clients as well as to commercial industries in application of modern technology for software conversion and re-engineering. Mr. Hogeboom recently completed a project for the State of Washington Department of Health and Human Services to convert the department's Cost Allocation System (a system designed to achieve equitable, accurate, and auditable allocation of costs of Federally funded state programs). He was in charge of all project phases, including assessment, analysis, redesign, conversion, and system and acceptance testing.

James O. Howard, Jr. Mr. Howard, in addition to his internal administrative responsibilities, specializes in strategic planning, market analysis, project administration, and product development for the financial services industry. His particular interest is in helping clients to make more productive use of computer and communications-based technologies.

Prior to joining Benton International, Mr. Howard held positions as a legal and policy analyst in the area of EFT, telecommunications, and security with various Federal agencies. These positions included Acting Chief Counsel of the National Telecommunications and Information Administration, U.S. Department of Commerce; Director of the Presidential Privacy Initiative during which he was responsible for coordinating the Carter Administration's overall privacy program and for directing the efforts of the inter-agency task force charged with recommending policies to the President on governmental operation of

EFT systems; and General Counsel, National Commission on Electronic Fund Transfers. He also served in the Office of the General Counsel, White House Office of Telecommunications Policy under Presidents Nixon and Ford.

Mr. Howard is a graduate of Wesleyan University, did graduate work in public administration at Syracuse University, and took his law degree at the Yale Law School.

Ms. Helene Jennings. Ms. Helene Jennings is an evaluation specialist at Macro; her principal responsibilities involve research analysis and evaluation. Ms. Jennings manages the follow up study of Maryland's Aid to Families with Dependent Children (AFDC) employment and training program, Project Independence. She has experience in the evaluation of programs for disadvantaged populations. Currently she is a member of the site visit team conducting case study investigations to document promising practices in the use of technology for at-risk and special education students.

Ms. Jennings has a solid background in education and the design of instructional materials. She taught social studies to adolescents both in the United States and abroad. She received a special foundation grant to develop the use of the computer in high school social studies courses. Utilizing the large databases in the Dartmouth College computer network, she designed and tested a 3-week unit for incorporation into the curriculum. She produced a manual for student use that was subsequently published by Dartmouth College. For Holt, Rinehart & Winston, she prepared a complete package of curriculum materials to accompany the two-volume U.S. history textbook, *Challenge of America*. Additionally, Ms. Jennings produced two films for the National Park Service for viewing at visitor centers, designed a filming plan for turning still photos into video format, and wrote the scripts for voice-over narration.

Ms. Jennings earned her Master's degree in Latin American Studies from Stanford University. She was awarded a Fulbright Fellowship following her undergraduate studies.

Jonathon D. Katz. Mr. Katz specializes in the development and implementation of customized applications for the financial services industry. He has been especially active in helping clients make more productive use of computer and communication-based technology.

Mr. Katz graduated from the University of Rochester with a BA in Economics and took his MBA in Banking, Finance, and Investment at Hofstra University.

<u>**Mr. Donald Mathes**</u>. Mr. Donald Mathes has had extensive experience in programs directed toward local governments and public administration overseas. As a U.S. Foreign Service Officer for more than 25 years, Mr. Mathes participated in the development and design of programs aimed at influencing or assisting local and national governments. His specialty was inter-cultural communications, the development of mutual interest between host governments and the United States to implement programs and achieve specific goals. Mr. Mathes served in a senior executive capacity in the Foreign Service, directing programs in Latin America, Brazil, and South Asia.

For Macro, Mr. Mathes has concentrated on the international drug demand reduction program. He has designed and conducted seminars, delivered training, coordinated an international conference for the OAS, and managed two contracts with the U.S. Department of State and the U.S. Agency for International Development. He is fully informed on USG procedures and policy; and he contributes a solid policy orientation to all technical assistance and training. Mr. Mathes received his Master's in International Relations from Washington University.

<u>**Mr. Daniel McGoldrick**</u>. Mr. Daniel McGoldrick is a Senior Study Director in the Public Sector Research Group. Mr. McGoldrick has seven years of experience managing complex and/or large-scale survey projects for many public sector organizations. Research on health and medical issues has been a specialty, having conducted research for the Department of Housing and Urban Development, the Federal Trade Commission, the Food and Drug Administration, the National Heart, Lung, and Blood Institute (NHLBI), and several studies for the Food and Nutrition Service.

Mr. McGoldrick is accomplished in all aspects of survey research, and particularly in instrument development and data analysis. Mr McGoldrick brings to the project an extensive, relevant background in the management of large-scale government research projects and program evaluations involving complex sample designs, difficult fielding, and extensive analysis. He has successfully met tight deadlines for completing data collections and preparing reports, and is skilled in the role of managing daily operations, generating task assignments and clearly communicating them to all project staff.

Among Mr. McGoldrick's experience with government survey research projects is his role as research manager and lead analyst in the evaluation of the Dayton, Ohio, off-line EBT demonstration, for which he led the team that designed all data collection instruments for

recipients and retailers and for which he currently is managing the collection and analysis of recipient and retailer data.

Mr. McGoldrick has an M.A. in Political Science, and has passed the PhD qualifying examinations at Michigan State University. As a graduate student he taught Research Methods courses.

Phillip W. McLauchlin. Mr. McLauchlin has over nineteen years of experience in Management Information Systems (MIS). His MIS background consists of systems analysis, programming, operations, instructing, data communications, management and consulting. Since 1983 he has been heavily involved in providing Electronic Data Interchange (EDI) services throughout North America to major national and international organizations representing transportation, chemical, retail, banking, electronics, automotive and government. Responsibilities have included cost-benefit analysis, design, development, training, implementation and management of EDI systems and translation software products in both user host and network host environments. He currently serves as an active member of the American National Standards Institute (ANSI) X12 committee to include secretary of Technical Assessment/B Subcommittee, and chairman of the Electronic Form and the Control Structure task groups. He also served as consultant to the U.N., Geneva for developing the UN/EDIFACT Secretariat data base.

Mr. Paul E. Moo. Paul Moo has a diverse and extensive background in mainframe systems and telecommunications. He has been involved with EDI since 1985 and has contributed significantly to the creation of one of the most advanced EDI installations in the world while at Texas Instruments. He has system design level experience in the areas of front-end EDI communications processors and standards translation techniques. Mr. Moo has been a consistent contributor in the EDI standards arenas. He is actively involved in the ANSI ASC x12 and participates in the Subcommittee on Communications and Controls. He has authored several papers on standard syntax. Mr. Moo has also appeared as an invited speaker of EDI before the Data Interchange Standards Association (DISA) Technical Seminar and the Electronic Data Interchange Association (EDIA) Annual Seminar. Mr. Moo's telecommunications background led to an invitation message type suitable for transmission of EDI data. He contributed a paper on EDI Information Object Architecture to that effort.

Karen Strycker Roth. Karen Roth has over 13 years of experience in the data processing industry and retail electronic banking. Although she has specialized in software project management and systems design and analysis, her past and current assignments have involved her in all aspects of the business planning, design, development, operations and implementation of the business planning, design, development, operations and implementation of the largest financial EFT/POS/ATM networks in the United States. She is intimately familiar with the systems specifications of the major EFT switches and with the functionality of their systems or services providers.

Before joining Benton International in 1984, Ms. Roth was Senior Program Manager for Switching Services for First Interstate Services, the data processing affiliate of First Interstate Bancorp, where she was responsible for the design, implementation and operation of First Interstate Bancorp's nationwide ATM and POS delivery systems. She also served on the Operating and Technical Committees of CIRRUS System, Interlink and the Northwest Electronic Network.

She has held data processing positions at Electronic Data Systems, as a systems and programming analyst for Blue Shield of California's Medicare health insurance claims processing business, and for McKesson, Inc.

Ms. Roth holds a BA degree in Economics from the University of California, Berkeley.

Ms. Carolyn Rutsch. Ms. Carolyn Rutsch has a strong background in maternal and child health and more than 8 years of policy analysis experience in the field of child welfare and health and human services. Her responsibilities include planning, management, and analysis for projects to improve access to health and human services for low-income women and young children.

Currently, Ms. Rutsch is co-authoring a series of monographs and publications on the implementation of 130 demonstration programs working with high-risk youth at risk of substance abuse for the Office for Substance Abuse Prevention (OSAP). Topics include how to start-up a substance abuse prevention program for high-risk youth and their families, and lessons learned about how to serve youth in public housing projects.

She is also working on the ASPE study on drug exposed children and the child welfare system, and is also beginning another ASPE task assignment to investigate the extent and

needs of homeless families with children. Both projects involve extensive expert interviews and site visits as well as analysis of existing reports and program descriptions.

Prior to joining Macro, she was a policy analyst for the National Commission to Prevent Infant Mortality where she analyzed trends in maternal and infant health and authored the widely distributed report, "Troubling Trends: The Health of America's Next Generation." She also served as project manager for the Commission's One-stop Shopping Initiative to coordinate health and human services for pregnant women. Ms. Rutsch also co-chaired the "Health Mothers, Health Babies" committee on substance abuse and pregnancy.

Prior to attending graduate school, Ms. Rutsch worked at the Brookings Institute for three years. Among other projects, she organized a symposium to explore policy options for providing universal access to health care for pregnant women and young children.

Ms. Rutsch serves as the Chair of the Substance Use and Pregnancy Committee of the National Healthy Mothers, Healthy Babies Coalition. This coalition brings together government, professional, and advocacy organizations to foster the sharing of program and policy information related to substance use during pregnancy.

Ms. Rutsch holds an M.P.A. in Public Affairs from the University of Texas.

Ms. Janice Sawyer. Ms. Janice Sawyer has 18 years of experience developing and producing training materials and developing curriculum (including training of trainers) for national, regional, and local programs in the ares of substance abuse prevention, intervention, and treatment. Using ISD processes she designed and developed instructional materials for the National Training System (NTS), the National Institute on Drug Abuse (NIDA), the National Institute of Mental Health (NIMH), and the Northampton County Prison. She has assessed training needs, reviewed training courses for accuracy and relevancy, and provided technical assistance to State governments on training program.

Ms. Sawyer is well versed in issues of cultural diversity. On the NTS, she will lead a task force that focuses on cultural sensitivities and people with disabilities. Prior to joining Macro, Ms. Sawyer developed, wrote, and delivered training on AIDS prevention for ethnic minorities for the NIDA. She was also in involved in a project with the National Institute on Mental Health to gather and analyze data on AIDS-related attitudes, beliefs, and knowledge among racial/ethnic groups, including Spanish-speaking and Haitian individuals.

Ms. Sawyer received a B.A. in Criminology and Psychology from the University of Maryland.

Michael A. Schauer. Mr. Schauer has worked with a broad spectrum of clients in a variety of assignments, including operations design and implementation, strategic planning, project management, merger and acquisition analysis, organizational planning, and financial management, since joining Benton International in 1985.

Mr. Schauer's prior experience includes service as Vice President and Group Manager of Central Processing Operations--International Division, Crocker National Bank (1983-1985). Previously, he served in various capacities in operations management, systems administration, and financial planning. Before coming to the west coast, Mr. Schauer was associated with Citibank New York, as Operations Manager, Chief of Staff, and Financial Analyst/Controller (1974-1979).

Mr. Schauer earned a BS in Economics from the City University of New York and an MBA in Finance/Economics from the University of Rochester.

Dr. William Schultz. Dr. William Schultz, a Senior Manager with Price Waterhouse, is experienced in economic analysis of regulated industries, international economics, econometric modeling, and statistical and financial computer modeling. With six years of experience at AT&T, Dr. Schultz has an excellent understanding of technical and management issues in the data transmission field. This knowledge will be extremely valuable in analyzing EBT systems and acquisition. As well as experience with the private sector, Dr. Schultz has financial modeling experience for a variety of Federal and state clients. He served as project leader on an engagement for the General Services Administration to recommend an approach to develop an automated quarterly revenue forecasting system. With experience in comparing public and private delivery of services, he recently completed a project to determine the desirability of privatizing the Anchorage Telephone Utility.

Michael J. Strijek. Mr. Strijek specializes in the analysis, planning and implementation of operational activities and systems development within the financial services industry. His prior experience includes activities in operations management, business development, systems, and financial analysis.

Mr. Strijek holds a BS in Accounting from Seton Hall University.

Ms. SueLynn. Ms. SueLynn, an IRD technical director, has 11 years of experience in the training, human resources, and organizational development fields. She has a solid theoretical understanding of personality factors in individual and organizational behavior. She delivered supervisory skill building and consulting services for 5,500 hospital employees; designed, coordinated, and presented a training program for 7,000 participants; and evaluated trainee performance and training program success in achieving objectives. In addition, she conducts 60 one-day seminars and retreats annually.

Prior to joining IRD, Ms. SueLynn designed and presented human resource development training programs and provided organizational and management consulting to private business, industrial, and Federal Government clientele, including the Naval Surface Warfare Center, Group Health Associates, University of Maryland, Cleveland Hospitals, NASA Headquarters and NASA Lewis Research Center, Office of Civilian Personnel Management, Communication Companies International, Alcoa Jamaica, and Oxford University (England).

Ms, SueLynn received her Master's in Education from the University of Arizona.

Mr. James Thompson. Mr. James Thompson, a Manager with Price Waterhouse, has experience with statistics, computer programming, and survey design and implementation. He brings to the project team experience in applying statistical procedures to Federal assistance programs. Mr. Thompson served as survey manager on an evaluation of FNS's Women, Infants, and Children Farmers' Market Coupon Distribution Project. The study assesses the nutritional benefits and dietary changes of women and children participating in the program, as well as the financial benefits of the program for farmers. Under Jim's direction, the Project Team sampled over 2,500 WIC participants and 400 farmers. Both telephone and on-site interviews were conducted to collect the necessary data.

Mr. Seth Twery. Seth Twery is a manager in the Finance Services Industry Practice with over eight years of information systems experience in that industry. Seth has conducted syndicated research in many areas of debit and credit processing and has developed and evaluated numerous debit processing RFPs. His EFT experience includes work with the national credit association, numerous EFT regional networks and money center banks.

Dr. John Vidmar. Dr. John Vidmar is in charge of survey operations (telephone and field survey data collection and data processing) for all Public Sector Research Group studies. He has 15 years of experience in all aspects of the survey process and specializes in research methodology. His unique role relates to (1) developing training and instituting procedures to help interviewers produce high quality survey data, and (2) the technical side of data processing and tabulation that will yield accurate and useful information in formats that clients can accommodate.

Located in Market Facts' Oak Park, Illinois, office, Dr. Vidmar supervises a staff of nine experienced analysts and study directors and oversees selection and training of interviewers, monitors interviewing at our National Telephone Center, coordinates field data collection through our Field Research Department, and directs data entry and cleaning. Analysts working under his direction will carry out the analysis plan to produce tabulations and other tables required for interpretation of the evaluation results.

Dr. Vidmar has been instrumental in conducting survey operations for such projects as, among many others, the evaluation of the Dayton, Ohio, off-line EBT demonstration for the Food and Nutrition Service, surveys with residents of public housing projects for the Metropolitan Planning Council of Chicago, and a health care survey for residents of rural areas for the Rural Health Care Administration, the largest effort every mounted by a Federal Agency to conduct survey work in rural,low income, medically deprived areas.

Dr. Vidmar recently returned to Market Facts after earning his PhD at the University of Illinois, where he gained substantial experience in managing projects for the university's Survey Research Laboratory. He is expert in all phases of survey research. In his work he has demonstrated substantial ingenuity in solving difficult operational problems to keep projects on schedule and within budgets.

Barry W. Welch. Mr. Welch specializes in unusually difficult, state-of-the-art, database and transaction processing software development for PCs, mini-computers, and main-frames. In recent years he has focussed on EFT systems, from terminal/store level through the

retailer or financial institution switch. He is intimately familiar with the functionality of all of the major systems and third party processing providers.

Nicole V. Willenz. Ms. Willenz is a specialist in EDI systems planning, standards development, and related consulting services. She served as the North American Rapporteur to the Untied Nations on The Working Party for International Trade procedures and Facilitation (1988-1991). She is also the former Chairman of the ANSI ASC-X12 International Project Team. She is a frequent and international recognized speaker before industry standards development groups and international trade communities on automation topics. She has nine years of experience in EDI standards development and information technology applications in business, trade, and manufacturing. She is skilled in the fields of software development and implementation, project management, and strategic planning.

3. Class III

Ms. Ariel Ahart. Ms. Ariel Ahart brings to this project in-depth knowledge of FNS food programs. Before joining Macro, she worked as a presidential management intern in FNS' Office of Analysis and Evaluation. She conducted program and policy analysis of domestic food assistance programs and worked on several projects that required an understanding of program eligibility rules. In conjunction with the 1990 Farm Bill and other legislative initiatives, Ms. Ahart conducted analyses of proposed changes on eligibility rules and the subsequent effect on program participation and cost. As a policy analyst, Ms. Ahart frequently prepared concise program descriptions, legislative summaries and briefing papers for senior-level agency officials. She also co-authored a congressional report on the impact of the 1988 drought, and a subcommittee report for the White House Task Force on Infant Mortality.

Currently, Ms. Ahart is working on a study to examine how local child welfare systems are responding to the needs of drug-exposed children. The study, which is funded by the Department of Health and Human Services, will identify model service delivery practices and intervention strategies among foster care agencies, child protective services, hospitals, drug treatment facilities and other service providers. Ms. Ahart helped develop the discussion guide which was designed to help identify key programmatic and policy issues; conducted telephone interviews with noted experts; and will conduct a series of on-site interviews with care providers and prepare a descriptive analysis of best practices based on the findings. Ms. Ahart earned her Master's degree in Public Policy from Duke University.

Ms. Marianne Albanese. Ms. Marianne Albanese has substantial management and technical experience in advanced technologies, and has experience in large scale systems development and commercial software development employing advanced technologies. She recently managed the design, development, and commercial release of a macro-based text retrieval system using CD-ROM. This award winning software product was developed using a structured methodology, and was built using a custom designed database manager. Ms. Albanese also managed the design, development, and implementation of an integrated equipment management system for a state's Department of Transportation.

Rick Bacchus. Mr. Bacchus specializes in Business Planning and Development, Product Development, Project Management, Market Research, and Financial Planning. He previously held the position of Director of Finance for Shared Health Network Services Ltd.,

a leading Canadian innovator in the development of electronic, point-of-sale health care transaction processing networks.

Mr. Bacchus holds both an MBA and BBA.

Peter L. Contardo. Mr. Contardo focuses on business analysis and product development. He holds both an MBA and a BS in Commerce, from Rider College. His undergraduate focus was Management and Organizational Behavior with a Concentration in psychology.

Michael A. Corley. Mr. Corley has over twenty years of experience in systems development life cycle. His background consists of EDI consulting, systems implementation and management, executive information systems, and office automation. Mr. Corley has several years experience with large-scale multimillion dollar project management. Mr. Corley has over five years experience developing and implementing a synchronous communication systems designed to share information for a wide variety of business systems. Mr. Corley managed his first EDI project when he built an EDI-based Executive Information System for the United States Army linking 23 offices.

Michael Friedlander. Mr. Friedlander specializes in database application development. He has designed several systems in use by school districts in NY, NJ, and PA. He has completed course work in Business and Computer Science at Pace University. He regularly writes and lectures on micro-computer related topics and has reviewed a number of software products for PC Magazine.

Ms. Lisa Hammer. Ms. Lisa Hammer is currently serving as survey director on the Housing and Urban Development (HUD) Quality Control Study, which is an effort to provide HUD with an efficient and accurate means of measuring the extent, severity and cost of errors associated with the income certification and rent calculation process of low income families applying for housing assistance. Ms. Hammer will be responsible for all phases of field data collection of over 6,000 interviews, including development of training materials, training and supervision of data collectors, as well as quality control of completed data collection instruments.

Ms. Hammer has also been involved in planning all aspects of field data collection for numerous studies, including the Women, Infants and Children (WIC) Vendor Study, sponsored by FNS, to detect vendor fraud and abuse in the WIC program. She was also a key team member on the 1986 Child Care Food Program Study for FNS, and was

responsible for conducting site visits to child care facilities to perform in-person interviews. She managed the Computer Assisted Telephone Interviews (CATI) to parents of day care children, was responsible for training and supervising the telephone interviewing staff, coordinating data collection activities, maintaining a survey control data base, reviewing data, supplying frame information for quality and completeness, and editing the resultant data base of over 2,000 interviews. Ms. Hammer received a B.S. in Elementary Education from the University of Maryland.

Mr. Marc Meltzer. Mr. Marc Meltzer, a Manager with Price Waterhouse, specializes in assisting organizations in the assessment, design, development, and implementation of image management systems. Mr. Meltzer's experience with Wang Labs will be especially useful in this engagement, since he has been responsible for oversight of numerous imaging system implementations. For example, he recently managed the development of a prototype imaging system for one of the largest mortgage resellers in the country. The system automated the applicant tracking process with the use of imaging technology. Mr. Meltzer has also been involved in assessing technical requirements of a number of imaging system opportunities and has developed technical requirements for numerous proposal responses.

David Owen. David Owen's career has focused upon the design and development of software. This has spanned hardware environments ranging from IBM mainframes through a variety of mini and micro systems. He has produced PC-based software which is currently being nationally marketed and has work published on the design of an RS232C hardware switch.

Mr. Owen's expertise is in on-line systems development in both the mainframe and PC environments, and typically these packages have been high-speed, communications-oriented transaction processing applications. Among the many IBM/PC Application packages developed by Mr. Owen is a remote access servicing system for an employee and job applicant skills which is still in use by the National Employment Network of Virginia.

Mr. Owen received a Liberal Arts Degree from Allan Hancock College in 1976 and completed Computer Science course-work at Arizona State University (1980-1983). He has published articles in the computer trades, including "Build Your Own RS232 Switch for Under $20" for Rainbow Magazine in 1983.

Mr. Robert Pels. Mr. Robert Pels, a Macro senior programmer/analyst, is currently lead designer and programmer on Macro's project to develop a voice-activated drawing program for physically handicapped children. Mr. Pels has served as a programmer or chief programmer on several of Macro's OSEP-funded educational technology projects. He was chief programmer on the projects to develop daily living skills simulations and science simulations, including "An Interactive Videodisc Program to Evaluate and Train Job-Related Math Skills for Transition." This videodisc was awarded a 1991 Merit Award from the Nebraska Videodisc Awards, and is now available commercially as *Social Skills on the Job.*

He has programmed in a variety of languages, including C, Pascal, FORTRAN, LISP, SAS, Prolog, TenCORE, and Assembly Language. Mr. Pels' experience in the software field prior to joining Macro covers a broad spectrum from database programming to software engineering.

Mr. Pels holds a B.S. in computer science from the University of Vermont.

Ms. Elaine Robey. Ms Elaine Robey brings to the project a strong background of training and experience in the areas of technology-based instructional product design and development. Currently, Ms. Robey is Deputy Project Director on the OSEP-funded project, "Making Administrative Decisions About Technology by Examining Promising Instructional Practices." Ms. Robey also serves as design team leader for the Phase II project, "Development of an Interactive Videodisc Program for Use by Mildly Cognitively Impaired Adolescents to Build Decision-Making Skills as Related to Risky Behaviors." Ms. Robey is also a member of the Design Team for another Phase II SBIR project, "Development of an Interactive Videodisc Program for Use by Preschool Children to Explore Early Math and Science Concepts."

Previously, Ms. Robey was the lead instructional designer and programmer for the OSEP-funded development project, "An Interactive Videodisc Program to Evaluate and Train Job-Related Math Skills for Transition," awarded a 1991 Merit Award from the Nebraska Videodisc Awards. Ms. Robey also was involved as a research specialist on two closely related OSEP-funded research projects--"Evaluation of the Integration of Technology for Instructing Handicapped Students (High School Level)" and "Studies of Special Education Administrative Involvement in Computer Implementation." Ms. Robey received her Masters degree in Curriculum and Instruction from the University of Maryland, College Park.

Ms. Patti Robinson. Ms. Patti Robinson, a Senior Consultant with Price Waterhouse, has over six years of experience in implementation of large and small scale information management systems for the Federal government. Through her experience she has acquired considerable understanding of government accounting and financial management standards and requirements as related to systems implementation. Her data processing experience includes analysis/requirements definition, design, construction, systems and acceptance testing, conversion, development of user and system documentation, training, and post-implementation support. Ms. Robinson is currently serving on an EDI Feasibility Study, Economic Analysis, and Prototype Plan for the IRS. She was a member of the team responsible for analyzing the current processing environments and identifying opportunities to use EDI. This task included documenting the alternative EDI solutions and evaluating the relative merits of the various alternatives. Ms. Robinson was also involved in collecting data for and developing a Lotus 123 Cost Model in support of the economic analysis. The cost model was designed as a tool for this project as well as for evaluating future EDI proposals.

Mr. Leo J. Ryan. Mr. Leo Ryan brings experience in health, program evaluation, research, communications, and international training. Through a contract with the U.S. Department of State, Bureau of International Narcotics Matters (INM), Mr. Ryan is currently delivering demand reduction training, training of trainers, and evaluation and needs assessments to middle and upper level officials throughout 12 countries in Latin America, the Middle East, and the Far East.

Demand reduction workshops focus on the key components of demand reduction: orientation of the policy makers, public awareness, prevention theories and approaches, public/private sector coordination, and needs assessment/evaluation. In a one-week period, participants representing all demand reduction related fields (e.g., medicine, treatment, mass media, legal arena, NGOs, youth clubs) are given a general overview in each area, asked to identify national gaps in each area, and to make recommendations and commitments to follow up on an individual basis. Mr. Ryan has developed curriculum for the public awareness and public/private sector coordination modules of this workshop. He has coordinated and conducted this workshop in Bolivia, Colombia, Peru, Venezuela, Curacao, The Dominican Republic, Haiti, Greece, and Israel. Mr. Ryan holds an M.A. in International Communication from The American University in Washington, D.C..

Ms. Sharon Stout. Ms. Sharon Stout, a Macro research specialist, brings to this project a strong background in research, evaluation and policy analysis. Her strengths include questionnaire design, interviewing and analyzing qualitative and quantitative data. Ms. Stout is currently a key Macro team member on a 3-year evaluation project for OSAP to evaluate demonstration programs working with youth at high risk for substance abuse. Her focus is on the programs' planning and implementation strategies, approaches for recruiting and retaining clients and staff, developing and maintaining networks, and evaluation.

Ms. Stout has had a key role in the questionnaire design for the ACYF project to study the underlying factors of youth homelessness. This study includes interviews with 400 homeless youth from 8 major metropolitan areas. Earlier, she served as a research consultant for the Institute of Women's Policy Research where she focused on family policy, child welfare, and domestic violence issues. She has also worked on economic policy papers on topics such as housing affordability, the Job Training Partnership Act, trade policy and American living standards.

Ms. Stout holds a Masters degree in collective bargaining and labor economics from Cornell University, and has completed all coursework for a Ph.D. in this area.

Mr. Stephen Terrell. Mr. Stephen Terrell, a Senior Manager with Price Waterhouse, is experienced in a broad range of manufacturing, materials management and logistics functions, including purchasing, production control, maintenance, and distribution. He has performed systems development tasks such as needs analysis, concept development, planning, design, implementation, test and review, and system operations for both Federal and commercial clients. Mr. Terrell has been involved with numerous projects involving automated data processing systems, and has participated in aspects ranging from RFP development to planning, implementation, and management.

Ms. Kathleen Wholey. Ms. Kathleen Wholey has 4 years' experience programming and coordinating data activities for major quantitative research projects. Currently, she is database programmer for two NIDA projects: AIDS Outreach to Therapeutic Community Contacts, and Clients and Pregnant Women and their Children. Both involve field sites at multiple locations and large datasets (over 600 variables each, for over 2,000 clients). Ms. Wholey is responsible for creating and implementing systems for receiving, coding, and cleaning, qualitative and quantitative statistical analysis of the data, and monthly, quarterly and on-demand statistical analyses. She is also currently leading the data team on a

Department of Labor study of quality control procedures for implementing unemployment insurance program.

Ms. Wholey's is knowledgeable in software design and development, programming languages (SAS, SPSS, SPSS PC+); authoring languages; all phases of instructional materials development including needs and task analysis, design, scripts and storyboards; on-site production assistance; computer screen layouts; and in designing and developing databases and programs.

Ms. Wholey holds a bachelor's degree in political science from Spring Hill College, and is currently working on a Master's in Learning and Instruction at Catholic University of America.

Dr. Nathan Young. Dr. Nathan Young will serve as a consultant to the Price Waterhouse team. Dr. Young's research, has focused on methodology and policy of analysis of food consumption policy issues. As part of his master's program at the University of Minnesota, Dr. Young with Benjamin Senauer, reviewed cross-sectional survey data establishing that observed between differences observed cash and coupon benefits on food expenditures were not entirely attributable to the restrictions on coupon expenditures. In his dissertation work, he developed a methodology to allow for flexible utilization of prior information in food demand analysis.

Since coming to The Urban Institute, Dr. Young has continued his focus on food policy issues. As part of the research team for the FNS Child Nutrition Analysis and Modeling - II contract, he analyzed on a quick turn-around basis, the Federal Review of Local Management practice, developing the sample and supervising the data entry, and analysis.

He has been involved in both cost and client impact studies in the evaluation of the food stamp cash-out as part of the Washington State Family Independence Evaluation. He designed the survey for the administrative cost survey, and as a part of a team with FNS, NORC and Urban Institute staff, took part in the development of the Food Stamp Core Cash-out Survey Instrument. Currently, working with B. Cohen he is analyzing the core and add-on questions for the Washington State Client cash-out survey, and with R. Yudd, is analyzing the impact of the mixed food stamp/cash-out benefit delivery system on administrative costs in Washington State.

4. Class IV

D. Alan Achterberg. Mr. Achterberg specializes in financial and business case analysis, evaluating information systems, and creating both financial and operational models. Since joining Benton International in 1989, he has focused on the analysis of delivery systems for retail banks and payment systems for retail operations.

Before joining Benton International, Mr. Achterberg was the MIS Director for a Los Angeles legal firm while working to earn his BA in Economics from the University of California at Los Angeles. He has also used his background in computer science and mathematics to design and implement various information systems within Benton International, including invoice production, expense tracking, and profitability analysis.

Mr. Bruce Caswell. Mr. Bruce Caswell, a Senior Consultant with Price Waterhouse, has experience in program evaluation and survey design. Mr. Caswell is currently an analyst for the study of Food Service Management Companies (FMCs) in School Nutrition Programs. He is designing detailed survey instruments to be used in a structured quantitative and qualitative analysis of the relationship between FMCs and school districts to be used across the nation. He will soon be making on-site visits to interview school officials and FMC staff. Mr. Caswell's training as a public policy analyst from the Kennedy School Of Government at Harvard University provides him with a strong background in understanding the needs of government support programs. This training includes extensive data analysis and evaluation techniques, research methodology, and program evaluations.

Mr. Kevin Confoy. Mr. Kevin Confoy, a Staff Consultant with Price Waterhouse, has experience with statistical analysis, Federal assistance programs, and designing and implementing surveys. He served as an on-site analyst for Price Waterhouse's WIC Farmer's Market Coupon Demonstration project interviewing several farmers on their experience with the program, and collecting relevant on-site data to determine the effectiveness of the program. Mr. Confoy is currently an analyst for an engagement with the Food and Nutrition Service to determine the involvement and influence of private food service management companies (FMCs) on school district food service programs. His involvement to date has included the design of a qualitative survey and the preparation of an in-depth study plan. Mr. Confoy has a Bachelor's in Economics from Williams College.

Ms. Katherine Flint. Ms. Katherine Flint serves as survey coordinator on a multiyear school survey for the Centers for Disease Control. Her duties include assembling and distributing informational packages to participating State and local education agencies (SEAs and LEAs); responding to clearance protocols of LEAs; and gathering from LEAs by phone information related to local sample selection and preparation for data collection. She also assists in distributing and processing survey materials and participates in training sessions and field data collection, field staff recruitment, and travel arrangements. Ms. Flint serves as a backup data collector and has administered the survey to secondary school students. She supervises field staff and responds to requests from the field for materials, information, and assistance. In addition, she is in charge of response tracking and followup. Upon receiving the data from the field, Ms. Flint is responsible for editing and coding data before they are submitted for final analysis.

As a research assistant, Ms. Flint worked on the biennial Maryland Adolescent Survey that sought to measure students behaviors and attitudes related to alcohol, tobacco and drugs. First conducted in 1973,the survey was administered for the eighth time in the spring of 1989 by 215 public schools located in 23 of the state's 24 political subdivisions, making it the largest ever in both respects. A scientifically selected sample of 13,461 students took part. Ms. Flint was involved with editing and coding data returned by schools. In addition, she worked on the statistical analysis of student responses and assisted in the writing of the final report which was distributed statewide. Ms. Flint received her Bachelor's degree in Gerontology from Alfred University, and is currently working on her Master's in Health Education at the University of Maryland.

Ms. Janet Harris. Ms. Janet Harris is an Associate Study Director with Market Facts. Her presence on the proposed project team will provide depth in analysis and reporting. Formerly with the polling firm of Greenberg-Lake: The Analysis Group, Ms. Harris managed a nation-wide, school-based survey to measure pre-teen and teenage self-esteem, the largest study of its kind ever undertaken.

Since joining Market Facts in 1990, Ms. Harris has assisted the design, analysis and management of survey research projects for public and private clients. Her experience includes working closely with the prime contractor on the Dayton, Ohio, off-line EBT demonstration for the Food and Nutrition Service, overseeing daily operations of large nationwide studies for the U.S. Food and Drug Administration and the U.S. Fish and Wildlife Service. She has also written numerous reports for the U.S. Postal Service and for several public sector organizations.

Ms. Harris has a Bachelor of Science in Political Science from the University of Oregon. While earning a Master in Public Affairs from the Lyndon B. Johnson School of Public Affairs at the University of Texas at Austin, she specialized in advanced research methods with a concentration in survey research.

Heidi N. Scanlon. Member of a core group of consultants specializing in Electronic Data Interchange (EDI) planning and implementation in industry and government. Ms. Scanlon currently serves as an active member of the American National Standards Institute (ANSI) X12 committee to include Secretary of the ANSI ASC X12 Legal and Control Issues Task Group. She has successfully completed an intensive Price Waterhouse computer systems development training course. Selection to the course was based on Ms. Scanlon's demonstrated aptitude for performing technical and analytical tasks. During the three month program, she developed a strong working knowledge of systems development life cycles, including systems planning, design, coding and testing. She developed a working knowledge of COBOL and C languages in both microcomputer and mainframe environments.

Mr. Timothy Schranck. Mr. Timothy Schranck, a Senior Consultant with Price Waterhouse, has experience in cost/benefit analysis, financial modelling, office automation studies, training, and survey design. His extensive background in the evaluation, recommendation, and implementation of information technology hardware and software products will be extremely useful on many stages of the proposed engagement. Mr. Schranck recently served as the lead analyst on a project for the Internal Revenue Service to evaluate possible Target Image Recognition System alternatives for the IRS Currency Transaction Report (CTR) Modernization Project. The new imaging and optical/intelligent character recognition system will replace a cumbersome manual system with an automated method of processing huge volumes of paper-based information. His responsibilities included identifying alternatives to current procedures and policies that were politically, economically, and technologically feasible; gathering technical and cost data from the vendor community; evaluation of the costs and benefits of the different alternatives; developing and writing user and instruction manuals for the models; developing and conducting a three-day training seminar on the design and use of the models; and issuing a report on the findings of the economic analysis.

5. Class V

Ms. Hermine Theologus. Ms. Hermine Theologus currently serves as Macro's graphic artist, a position she has held since 1983. Previously, she was the executive secretary for the firm's president, and secretary to several of the company's associates. In addition to her specific job responsibilities, Ms. Theologus has participated in various corporate projects requiring Spanish-to-English and English-to-Spanish translation capabilities.

As Macro's graphic artist, Ms. Theologus is responsible for producing all artwork and tabular material for all company documents. She utilizes an IBM-compatible PC equipped with various graphic software packages, including graphing and charting software, desktop publishing software, flowcharting software, and WordPerfect. She uses a variety of other graphic design equipment, including a computerized Kroy lettering machine, as well as standard drafting materials.

Ms. Julia Withers. Ms. Julia Withers recently became an editor at Macro. In her previous position as products coordinator at BDM, Ms. Withers supervised the development of media products from initial conception through delivery. This involved researching literature, evaluating color visual material, and developed a mockup of a quarterly newsletter on spacecraft launches for NASA's Astrophysics Division.

In previous positions, Ms. Withers was responsible for producing the company's award-winning newsletter, supervising production of a monthly status report for 33 tasks on a contract with NASA's Goddard Space Flight Center (GSFC), and was a task leader on a separate GSFC contract. Ms. Withers' responsibilities for producing the newsletter involved writing articles, obtaining photographs and graphics, assigning stories, working with graphic artists and printers, editing copy, reviewing paste-up and bluelines, coordinating distribution, and training editorial assistants. Ms. Withers' responsibilities as a task leader involved managing a small technical resource library for Goddard's Space Data and Computing Division. She also wrote technical articles as requested by the Space Data and Computing Division for publication in a NASA journal. Ms. Withers received her B.A. in Mass Communications from the University of Denver.

6. Class VI

Ms. Juanita Bourguillon. Ms. Jaunita Bourguillon is Macro's word processing supervisor and systems administrator. Ms. Bourguillon is responsible for managing the primary functions of the word processing center. She is responsible for staffing, scheduling of work, and assisting work to the operators. Other responsibilities include interviewing, evaluating, and supervising word processing staff; producing word processing materials for proposals, contract deliverables, and in-house documents; serving as in-house advisor on word processing market technology; training all support staff on equipment applications and word processing procedures; and serving as primary backup to the production manager.

Ms. Linda McLaughlin. Ms. Linda McLaughlin serves as Macro's production manager. Ms. McLaughlin is responsible for organizing all production workflow and ensuring that all documents are completed on schedule. She distributes work among, and coordinates with, support staff involved in typing, graphics, proofing, editing, photoduplication,and binding, and assures that all products adhere to Macro formats and style requirements. She also serves as proposal coordinator for the company. In this capacity she reviews the request for proposal to determine the typesize, illustrations, number of pages, and number of copies required; assigns a number to each proposal; sees that all sections are typed, corrected, reviewed, and duplicated; and prepares the final document for packaging and delivery. In addition to these responsibilities, Ms. McLaughlin is one of four word processing staff, and produces draft and final copies of all in-house documents.

C. Relevant Project Experience

As discussed in Section A of this chapter, each member of the **Price Waterhouse Team** was selected for their particular range of expertise that collectively enables us to fully meet the needs of FNS with consulting services of the highest quality. *Price Waterhouse* brings an extensive corporate network, unparalleled resources, and substantial experience in the project management of multiple task order contracts with multiple subcontractors. *Benton International*, a recognized leader in EFT/ATM/POS technology, brings substantial experience in ATM/POS strategy, design, development, and implementation through engagements with many of the top equipment and service suppliers in the EBT environment. *Macro International* offers the team extensive experience in technical training and assistance, project management, research design, and data collection and analysis. *Market Facts, Inc.* is a nationally recognized survey research firm with extensive resources for data collection, and timely experience with EBT and the Food and Nutrition Service. *Electronic Strategy Associates* are expert in ATM/POS technology with applied experience consulting on EBT demonstration and in the development of the nation's first shared network -- TYME in Wisconsin. *Burger, Carroll Associates* join the **Price Waterhouse Team** with substantial experience in the development and implementation of WIC and integrated information system networks at the state level. This experience is particularly relevant as states examine EBT implementation for WIC and food stamps.

The remainder of this section presents relevant project experience for the six firms comprising the **Price Waterhouse Team**. For each firm there is a blue summary page describing the three referenced citations, and their particular relevance to the work to be performed under this solicitation. These pages, Exhibits II-10 through II-15 begin the experience sub-section for each firm. These pages are intended to meet the requirement that,

"OFFERORS SHALL EXPLAIN WHY THEY CHOSE THE EXAMPLES THEY INCLUDE". Regarding corporate experience, the Request for Proposals (RFP) requires the offerors to "summarize and discuss three current or completed projects that best illustrate their ability to conduct this contract". We interpreted this instruction to mean that each firm offering services as part of the solicitation is allowed three relevant project citations. We feel that only this broad interpretation is consistent with the recognized need for multiple sub-contractors and the range and depth of services and expertise demanded under this contract.

Exhibit II-9 presents a summary of citations referenced for each firm in the **Price Waterhouse Team**. The exhibit is presented in matrix format, illustrating the mapping between the selected project citations and key functional and substantive areas of expertise identified in the solicitation. Finally, the section ends with a description of the major facilities and equipment which will be used in performance of the contract.

Summary of Referenced Citations

CITATION \ CAPABILITIES	FIRM	Project Management	Research Design Methodology	Data Collection and Management	Quantitative Data Analysis	Qualitative Data Analysis	Cost Analysis	POS, EFT, and EBT Expertise	Financial Institution Practice & Procedure	Retail Food Industry in Connection with Federal Aid and POS Technology	Training and Preparation of Systems Manuals	Technical Report Writing & Editing
Department of Veterans Affairs Basic Ordering Agreement	PW	√	√	√	√	√	√				√	√
U.S. Dept. of Housing & Urban Development Current Basic Ordering Agreement	PW	√	√	√			√		√		√	√
U.S. Department of State Financial Management System	PW	√		√			√	√	√		√	√
EPS/ATM/POS Strategy Development	BI	√					√	√	√	√	√	√
Turnkey Systems Implementation and Program Management	BI	√					√	√	√	√	√	√
Systems Specifications Development and Application	BI	√					√	√	√			√
DHHS; OSAP:National Training System Community Partnership Training Program	MI	√	√								√	√
USDA; FNS: WIC Dynamics Study	MI	√	√	√	√	√						√
U.S. Department of Education: Pell Grant Central Processing System	MI	√					√	√			√	
Evaluation of the Off-Line EBT Demonstration	MF	√	√	√	√	√	√	√	√	√		√
Chicago Metropolitan Area Information Survey	MF	√	√	√								√
Quality Control for Rental Assistance Subsidies	MF	√	√	√								
USDA; FNS: Feasibility of Off-Line System Applications to Food Stamp Program Functions	ESA	√	√				√	√	√	√		√
Midway National Bank: Consulting Services for Ramsey Co., MN EBT Demonstration	ESA						√	√	√	√		
BUYPASS the System, Inc.: Conceptualization Development, and Marketing of BUYPASS	ESA	√					√	√	√	√		√
West Virginia WIC Information System Network	BCA	√					√				√	√
Oklahoma Public Health Information System Network	BCA	√					√				√	√
Maine WIC Information System Network	BCA	√					√				√	√

PW=Price Waterhouse BI=Benton International MI=Macro International MF=Market Facts ESA=Electronic Strategy Assoc. BCA=Burger, Carroll Assoc.

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Exhibit II-10

Price Waterhouse
Relevance of Selected Citations

Citation	Relevance to Contract
1. **Department of Veterans Affairs: Basic Ordering Agreement**	• Demonstrates ability to manage a large BOA and respond to multiple task orders, in a quick turn-around environment, while consistently meeting deadlines. • Exemplifies capability to marshall substantial firm resources across functional areas to address benefit delivery; program operations; management structure and costs.
2. **U.S. Department of Housing and Urban Development: Current Basic Ordering Agreement**	• Illustrative of our ability to conduct and manage a large BOA with multiple task orders cutting across several functional areas. Adherence to strict time frames. • Demonstrates capability to provide services for management; organizational, information and financial systems studies. Commitment to providing training and technical assistance with substantial client-contractor interaction.
3. **U.S. Department of State: Financial Management System**	• Exemplifies firms ability to conduct major systems contract ($34 million) through all phases from conceptualization to implementation. • Demonstrates capacity and familiarity with EFT-oriented systems issues including accountability and security. • Significant training and preparation of systems manuals.

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Project Experience of Price Waterhouse

Price Waterhouse citations of relevant project experience were chosen to illustrate the firm's capacity as prime contractor to initiate, manage and complete large-scale Basic Ordering Agreements with multiple and often simultaneous task orders and various sub-contractors. In addition to these citations, we felt is necessary to briefly mention our relevant recent experience with the Food and Nutrition Service.

First, Price Waterhouse was engaged by the Food and Nutrition Service to evaluate the ***Federal Demonstration Project of WIC Participants and Farmer's Market Coupons.*** This was an evaluation of the impact of FMCDPs on the dietary habits of women participating in the program and on the income of the farmers participating in the program. Secondly, Price Waterhouse is currently engaged with FNS to perform the ***Study of Food Management Companies in the School Nutrition Program.*** This study will analyze the range of experiences School Food Authorities have had in contracting with food service management companies, the extent to which the scope of services is comparable to self-operated districts, and the capacity of this approach to achieve more cost-effective services. The study will provide FNS with and up-to-date data base of the effects of food management companies on the NSLP and SBP program objectives as well as guidance in strengthening Federal policy guidelines regarding contract procurement, performance monitoring, and the delivery of effective services.

Price Waterhouse has completed projects under several large Task Order management contracts in the last three years. This experience allows us to manage such contracts and allocate personnel and resources efficiently, under varying work load. Our experience includes task order contracts for the following clients:

- Veterans Administration
- Internal Revenue Service
- Department of Housing and Urban Development
- Bureau of Engraving and Printing
- U.S. Postal Service
- U.S. Department of Energy, Energy Information Administration
- Urban Mass Transit Administration
- Department of State

1. Department of Veterans Affairs: Basic Ordering Agreement to Provide Assistance in the Design and Conduct of Detailed Analysis of Management Issues

Price Waterhouse had a Basic Ordering Agreement with the Department of Veterans Affairs (VA) to provide assistance in the design and conduct of detailed analysis of management issues.

We believe that our performance on the Indefinite Quantity Contract is testimony to our commitment to timely and high-quality services. The fact that over 50 employees worked on the various VA tasks, including eight partners, indicates the level of commitment we are willing to make for these types of contracts.

Each of the tasks completed under the contract is described below.

a. Organization Study of the Office of Budget and Finance

Price Waterhouse completed an organizational analysis of the VA Office of Budget and Finance (Controller's Office). Our analysis included assessments of the organizational structure of the office, procedures for managing major financial systems development projects, location of major financial operations functions, and opportunities for improving financial management through electronic processing and transfer of financial information.

b. Decentralized Medical Management System Cost Benefit Analysis and Program Design (Including Request for Proposals and Procurement Design)

Price Waterhouse conducted system cost benefit analyses with interim reports over a two year period, integrating alterations as system development advanced. Costing included procurement, pilot testing, and implementation of this commercial cost accounting/management decision support system of all VA Medical Centers (VAMCs) in the Veterans Health Services and Research Administration (VHS&RA). The evaluation included projected analyses based on extensive market research and projected estimates for high-level system expansion and integration to include up to 172 VAMCs. This engagement required the collection of both qualitative and quantitative data from representative VAMCs (both surveys and on-site interviews with respondents were required) and statistically analyzing the data for use in the cost benefit model. Other principal components included:

- VA/Contractor Performance -- Structural and process review of VA implementation of DMMS, including contractor performance, intra-agency performance, and recommendations for education and training.

- Management Acceptance -- Evaluation of pilot test results, using case studies and structured interviews of users to determine the impact of the pilot test on management.

- Provider Acceptance -- Collaborative research study observing the effect of DMMS on physician selection of resources and how providers use the feedback system.

The second portion of the engagement involved coordination and implementation of procurement proceedings for a complex systems integration and expansion project designed to include up to 172 VA medical centers. Price Waterhouse wrote the RFP for this dual phased VA procurement and supported the agency throughout the process, including conducting extensive procurement regulatory review. We confirmed and implemented required RFP format, system specific content, and legal procedure. We produced complete cost evaluation procedure and complete technical evaluation description for the RFP and for the post-proposal issuance evaluation. Additionally, we formulated evaluation techniques for both cost and technical evaluation.

c. <u>Study of the VA Resource Allocation Methodology/Resource Allocation System (RAM)</u>

Price Waterhouse conducted an evaluation of the RAM for the VA. The RAM is designed to allocate a portion of the VA Medical Centers' budgets based on the efficiency with which they provide services. The RAM is composed of four separate models.

Each facility determines the amount of work it produces under each of the models, and the costs of producing that work. Those costs are then compared to the average costs for an equivalent amount of work, and the hospitals' budgets are adjusted accordingly.

Price Waterhouse, in conjunction with a subcontractor (SysteMetrics) conducted site visits to 10 VA Medical Centers (VAMCs) across the country. The VAMCs selected for visits differed in the type of facility (e.g., large, university-affiliated, tertiary care facilities; small, unaffiliated, primary care facilities; long-term psychiatric facilities) as well as experience under RAM (i.e., consistent gainer of funds, consistent loser of funds, initial loser turned gainer, and initial gainer turned loser). During the site visits, we collected a variety of clinical and administrative information to assess the validity of the RAM system. After conducting the site visits, we tested our hypotheses using VA Central Office data bases. This analysis of secondary data allowed us to confirm areas where further refinement of the RAM system was needed.

d. Strategic Information Systems Planning (SISP) Project

Price Waterhouse recently developed a Strategic Information Systems Plan (SISP) for the VA's nationwide network of 172 medical centers, 220 outpatient centers, and 100 nursing homes. The VA Chief Medical Director appointed a high-level 131-member SISP Committee to guide our efforts. The SISP Committee members represented the diverse perspectives of the VA from the headquarters, regional, and medical center levels, and from various disciplines throughout the VA (e.g., physicians, planners, IRM directors, etc.).

We used the Price Waterhouse SISP methodology in conducting the work. As part of the project, we evaluated the following: mission of the VA; goals and objectives of the VA;

factors critical to the success of the VA; external factors likely to affect the VA and its organization and automation needs; internal administrative and clinical issues facing the VA's organization; VA's operational policies, processes, organizational structure, and systems; application priorities in terms of functional and programmatic areas and the headquarters, regional, and medical center levels; emerging technologies that the VA should take advantage of in the future; organizational and management approaches for designing, developing, and implementing IRM strategies.

e. Guidelines for Preparing the Field Office Automation Strategic Plan (FOASP)

Price Waterhouse created a document designed to assist VA Medical Centers in preparing their Field Office Automation Strategic Plans (FOASPs). The purpose of the FOASP is to document OA needs; current OA environment at the VA medical center; target environment including additional users, new OA systems, and support resources; rationale for choosing the target environment; and implementation plan for procuring, installing, and operating the hardware, software, and telecommunications that comprise the target environment.

Our document, Guidelines for Preparing the FOASP, includes the definitions, forms, techniques, and related information that will facilitate development of a plan for the purchase, installation, and utilization of OA resources at the medical center level.

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f. <u>Requirements Definition and Conceptual Design for the Canteen Service Integrated Management Information System (IMIS)</u>

The Veterans Canteen Service (VCS) is an independent organizational unit of the VA which operates food service and retail operations at VA Medical Centers nationwide. The VCS as a self-supporting service, does not receive any Federal financial assistance and operates solely on the revenues derived from the services provided at the Canteens.

Price Waterhouse was engaged to define and document functional requirements and a conceptual design of the Integrated Management Information System (IMIS) for the VCS. IMIS will consist of three components: Retail Management Information Systems (RMIS), Food Management Information System (FOOMIS), Financial Management Information System (FMIS).

The FMIS component of IMIS is in operation and is running in an NCR V 8555-II environment. The new components of IMIS will interface with FMIS.

The development of the specifications for IMIS began with fact-finding interviews at selected VCS Canteens, the VCS Central Office, the Navy Resale System, the Army/Air Force Exchange System, and other retailing organizations. Information was collected on information flows within and between the Canteen and VCS, merchandising, menu planning, food supports, retail support, management and financial reporting, Accounts Payable, Accounts Receivable, General Ledger, ordering, receiving, cashiering, and inventory accountability.

Price Waterhouse documented the functional requirements for IMIS and then developed

feasible system alternatives.

g. Cost Benefit Analysis of Time and Attendance Record-keeping Alternatives

Price Waterhouse completed a cost benefit analysis review of time and attendance record-keeping alternatives for the VA. We reviewed the current Time and Attendance System, conducted site visits, and designed and administered an in-person questionnaire to VA personnel. The survey data was analyzed to produce a cost benefit model that projected the amount of savings for each of the proposed alternative technologies (video display terminals, optical mark readers, and badge readers).

After the prototypes were implemented, we revisited sites, collected data, and issued a user satisfaction survey to determine employee attitudes and achieved time savings. After the users were surveyed, we finalized the cost benefit model and issued recommendations for the appropriate technology to utilize.

h. Technical Review of VA Cost Benefit Handbook

Price Waterhouse conducted a detailed technical review of the VA proposed Cost Benefit Handbook. The Handbook was designed to serve as a "how-to" guidebook and reference manual for VA personnel in assessing purchasing and other financial decisions. Our review included a thorough assessment of the suggested methodologies and the organization of the handbook. We prepared detailed recommendations on how the document could be made more "user-friendly", as well as on the specific methodologies and organization. We also prepared for the VA detailed examples of the concepts addressed in each chapter of the handbook. These

examples were included as a means of encouraging the use of the document as an actual "how-to" guide.

i. Conceptual Study of the VA Financial Management System

Price Waterhouse was engaged to develop a strategy, alternatives, and approach for a comprehensive agency effort to implement a modern, automated, integrated, agency-wide Financial Management System (FMS).

An analysis of the existing systems (numbering over 40) was conducted through a series of interviews and visits to the VA's data processing centers. This data was used to develop high-level functional and technical requirements for FMS. Generic Federal financial systems requirements were developed by reviewing OMB circulars, GAO Title 2, the U.S. Standard General Ledger, and the Federal Financial Managers Integrity Act of 1982.

These requirements were used to evaluate the adequacy and adaptability of the off-the-shelf financial systems. We then performed an analysis of the alternative approaches to implementing the FMS. This analysis included the identification of advantages and disadvantages, relative cost, and major steps required. These factors were used to support the recommended approach.

j. FMS Preliminary Cost Benefit Analysis

Price Waterhouse was engaged by the VA Office of Budget and Finance (OB&F) to conduct a high-level cost benefit study for the comprehensive agency effort to develop an automated, integrated, agency-wide Financial Management System (FMS).

We used the Conceptual Study of the VA Financial Management System described above as its basis. A series of interviews were also conducted at the VA central office in Washington, D.C., and the Austin, Texas data processing center.

The purpose of this study was to provide the VA's top management with preliminary cost benefit data related to the development of FMS. This data was used to determine the cost justification for the proposed FMS; assist in the estimation of the FMS project costs for budget requests to OMB and Congress; and assist the VA in supporting its planned strategy of improving its financial systems.

k. Cost Benefit Study of the Enhanced Decentralized Hospital Computer System (DHCP)

Price Waterhouse completed a cost benefit analysis of the Enhanced DHCP for the VA. The system, which is being implemented in the VA's 172 medical centers, automates eight hospital functions which include: Dietetics, Medical Records, Mental Records, Mental Health, Nursing, IFCAP (a fiscal and supply application), Radiology, Surgery, and a Decentralized Medical Management System.

The project team examined the functionality of each application by conducting interviews with Central Office Program Officials and initial walkthroughs of medical centers in order to identify work actions that would be eliminated or significantly reduced through automation. Once work actions were identified, the project team visited 10 VA medical centers to interview hospital personnel and conduct time tests on the individual work actions. A detailed model was developed that computed cost savings from the time savings observed at the medical centers, calculated total lifecycle costs, and computed a net present value of the Enhanced DHCP. Tangible benefits (cost savings) were then calculated. Additionally, intangible benefits, such as improved patient care and management information were documented.

I. Program Evaluation of Nursing Home Care Programs

Price Waterhouse conducted a comprehensive program evaluation of the VA Nursing Home Care Program. This evaluation included a detailed analysis of several program parameters; cost efficiency, quality of care, quality of life, compliance with regulations.

The methodology for the program evaluation involved significant data collection at the VA central office, VA medical centers, community nursing homes, and state nursing homes. Techniques used during the evaluation included: analysis of computerized data base information; interviews and meetings with VA staff; review of official documentation; focus group sessions with nursing home patients.

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m. Post Implementation Evaluation of Decentralized Hospital Computer Program (DHCP) Initial Core System

Price Waterhouse completed a post-implementation evaluation of the DHCP Initial Core System for the VA. Initial Core is the first phase of the DHCP system, which represents a major automation initiative affecting the VA's 172 medical centers. Initial Core automates several hospital functions including hospital admission, patient registration, clinic scheduling, cancellation and rescheduling of appointments, and outpatient pharmacy operations.

For this project, we developed a data collection plan and visited eleven VA medical centers to interview hospital personnel and conduct time studies of selected processes. In addition, the team researched comparable automated systems and new technologies which have been implemented by private sector medical centers.

The final deliverable was a comprehensive cost benefit analysis and a report of findings and recommendations which assisted the VA with management of the system and implementation of later phases of DHCP.

n. Study of Tobacco Sales in Canteens

Price Waterhouse conducted a study of the sale of, and possible elimination of, tobacco at canteens in the VA Medical Centers (VAMCs). The purpose of this engagement was to determine the amount of sales and revenue that would be lost if tobacco were removed, and to recommend courses of action in a tobacco-less environment.

The methodology for this study was two-tiered. First, substantial quantitative analysis

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was conducted, using both spreadsheet and econometric packages, in order to obtain a solid financial picture of the canteens. Second, qualitative analysis of the project was completed. This step included site visits to medical centers, where VAMC Directors and Canteen officers were interviewed. Retail experts from Price Waterhouse were also interviewed, and substantial research was conducted regarding potential new product lines for the canteens.

o. Evaluation of Personnel-Payroll Systems

Price Waterhouse was engaged to complete a study of the Federal personnel-payroll process that recommended which of the two identified candidate personnel-payroll systems should be adopted as the standard personnel-payroll system for the federal government. The objectives of this study were to:

- Develop a standard Federal personnel-payroll system requirements model.
- Develop a methodology for assessing current in-house system functionality and determining the best replacement scenario.
- Identify the standard replacement personnel-payroll system for the Federal government.
- Develop a standard implementation strategy and plan for installing the standard replacement system.

The VA initiated this effort, in coordination with the Office of Management and Budget, to meet specific goals defined by the President's Council on Management Improvement (PCMI) to improve the efficiency and quality of personnel-payroll processing.

Reference:	Dr. Phyllis Thorburn COTR (202) 233-2646
Dollar Amount:	Varied by task.
Time of Performance:	Ongoing
Performance Assessment:	All project tasks were successfully completed.

2. U.S. Department of Housing and Urban Development: Current Basic Ordering Agreement

Price Waterhouse is currently under contract with HUD to perform general management and analytical studies under a Basic Ordering Agreement (BOA). This Basic Ordering Agreement covers the following topics:

- General management and organization, including: staffing and resource requirements, organizational analysis, and workflow analysis/process.
- Human resources, including: staff and managerial training, management development, and quality and productivity enhancement.
- Information resources management (IRM), including: IRM policies and procedures, new technology and automated information systems, feasibility assessment and cost-benefit analysis, automated system security and controls, and information systems reviews.
- Financial management systems and internal controls, including: refinement of HUD's approach to conducting reviews, conduct required under the FMFIA, and assistance in correcting deficiencies.

Price Waterhouse is performing five tasks under this BOA. Each of the tasks is described below.

a. U.S. Department of Housing and Urban Development: Independent Assessment of the Office of Public and Indian Housing (PIH)

Price Waterhouse has been engaged to document, assess, and offer recommendations for the improved operation of HUD's public housing program, which provides approximately 1.3

million units of housing to low-income citizens throughout the country. Specifically, we have been asked to examine four key elements of public housing: (1) the modernization program, (2) the operating subsidies provided by HUD to close the gap between rental income and operating expenses, (3) the procurement of goods and services by the local Public Housing Authorities (PHAs), which own and manage the developments, and (4) the payment process for the modernization and development program. More broadly, Price Waterhouse has also been asked to document and assess three more cross-cutting, systemic issues in HUD's implementation of the public housing program: (1) information systems, (2) internal controls and financial management, and (3) the management and organizational structure of the program.

The project is divided into three phases:

PHASE I (6 weeks):	Review, documentation, and risk-based ranking of program elements.
PHASE II (12 weeks):	Further assessment of selected program elements, with recommendations to correct weaknesses and improve program delivery.
PHASE III (Optional):	Development of an implementation plan for the recommendations developed in Phase II and conduct of a cost-benefit analysis.

The project team consisted of closely collaborating representatives from three OGS special practice units: Management Science and Economics (MS&E); Advanced Information Technology (AIT); and Accounting, Auditing and Management Controls (AAMC). In six weeks, the Phase I team:

- Carried out high-level interviews throughout PIH, a focus group of field office

and regional office directors and branch chiefs, and a site visit to Richmond (VA) to visit both the HUD field office and the Richmond Redevelopment and Housing Authority.

- Gathered and reviewed program documentation, including relevant handbooks, internal and external studies, funding information, and testimony.

- Produced a comprehensive report documenting the programs and process and providing a risk-based ranking of major weaknesses.

Phase II began in December, 1990, when officials at PIH completed their review of the report and determined the areas for more concentrated review and recommendations.

b. **U.S. Department of Housing and Urban Development: Development of Self Assessment Guides to Facilitate Review of Department's Internal Control Systems by Departmental Managers**

Price Waterhouse has been engaged to develop self-assessment guides for the Department of Housing and Urban Development to facilitate review of the Department's internal control system by Departmental managers. The self-assessment guides cover several of the Departments' major program areas, including the Government National Mortgage Association, the Federal Housing Administration, Community Development Block Grant Program, Elderly/Handicapped Loan Program, and Fair Housing and Equal Opportunity Program. Each guide will provide an overview of the processes within the program, an inventory of control risks and techniques, procedures for testing each control technique, and forms and instructions for recording and analyzing test results. The guides will also provide a method for quantifying test results and assignment of control ratings to individual field offices and the program area as a whole. Upon completion of the guides, Price Waterhouse is also to implement the guides at

one field office to ensure the instructions are clear and effective in testing controls for the program.

c. U.S. Department of Housing and Urban Development (HUD): Delegated Processing Program for Multifamily Mortgage Insurance

Price Waterhouse is currently assisting HUD to develop and implement a model Delegated Processing Program. The program will provide a method which allows HUD field offices to delegate the processing of Multifamily mortgage insurance applications while retaining underwriting authority. The major tasks in this engagement are described below.

- Reviewing the Multifamily insurance program organization and operations and developing a plan that will allow HUD to delegate insurance application processing while minimizing their exposure to risk.
- Designing internal controls that monitor critical information to ensure HUD's policies, procedures, and regulations are followed in the delegated processing of Multifamily mortgage insurance.

- Identifying information requirements for monitoring and oversight of the delegated procedures and preparing a system requirements abstract of the system necessary to meet HUD's objectives.

- Identifying the types of training materials needed, designing the training materials, and participating in training sessions to ensure success.

d. <u>Five-Year System Integration Plan for Mortgage Insurance Accounting and Servicing Group</u>

Price Waterhouse was engaged by HUD to develop a five-year system integration plan for OFA's Mortgage Insurance Accounting and Servicing (MIAS) Group. The objective of the five-year plan is to provide a strategy for HUD to achieve financial systems integration, to consolidate system development efforts, to remedy existing system deficiencies, and to provide improved financial information for system users. Completion of the five-year financial management system plan will also enhance HUD's compliance with integration criteria required under the Federal Manager's Financial Integrity Act.

Our approach included extensive interviews with representatives form all MIAS operating groups, FHA program personnel, and representatives from the Office of Information Policies and Systems. We review system documentation, HUD-wide ADP planning, current development and procurement initiatives, system database descriptions, and record layouts.

Our report provides a detailed description of the current MIAS financial system environment, including a system inventory, identification of interfaces with program systems, system relationships in FHA insurance processing, and system cost. Our integration approach will significantly simplify the system environment resulting in improved system operations,

performance, support, functional capability, integrity and reliability.

e. **U.S. Department of Housing and Urban Development: Quality Assurance Reviews of Specific Programs within HUD for Adequacy of Internal Controls and Compliance with OMB Circulars**

Price Waterhouse was engaged by the Department of Housing and Urban Development to perform assurance reviews on specific programs within HUD for adequacy of internal controls and compliance with OMB circulars. The reviews included HUD's administrative and accounting controls and extended into HUD's programs and administrative operations. Throughout the engagement, we identified and reported on inefficiencies and weaknesses relating to internal accounting, financial management, and administrative control procedures. The following the areas were reviewed: HUD Administrative Accounting System (HAAS); Program Accounting System (PAS); Section Eight Accounting System (SEAS); Multifamily Claims Analysis and Accounting (MCAA); Subsidized Housing Programs Division, Subsiding Accounting Branch; Coinsurance Programs; Single Family Mortgage Credit Branch; Multifamily Accounting, Reporting and Servicing System (MARS); Single Family Notes Servicing; and Title I Insurance.

Reference:	Mr. Harold W. Henry Director, Office of Productivity and Management Improvements (202) 708-1027
Dollar Amount:	$1,200,000 to date
Time of Performance:	Ongoing
Performance Assessment:	All project tasks were successfully completed.

3. U.S. Department of State: Development of Financial Management System (FMS)

FMS is a multi-platform application spanning the range of mainframe, mini, and micro computer systems integrated through wide and local area networks to embassies and governments. Price Waterhouse started this engagement with the Department of State in 1980. During the initial phases of the project, Price Waterhouse conducted extensive fact finding to identify problems with the existing system and define information requirements. After defining the requirements, Price Waterhouse developed a conceptual design describing the objectives and benefits of the FMS. The design report also defined the required operating environment to support the system and proposed a distributed processing approach.

The conceptual design also identified the impact of the FMS on other related manual and automated systems, both within and external to the Department, the extent of code structure changes, data base management needs, and the extent of required organizational staffing and procedural changes.

Because the conceptual design fully satisfied the requirements of the various classes of users, the Department, and external agencies, Price Waterhouse was awarded the contract to develop, code, test, and implement the system throughout the world.

FMS was designed to support financial management functions in over 15 locations in the United States and over 300 locations in over 140 countries overseas. Its operations are funded under 300 reimbursement agreements from other Federal agencies and by approximately 24 appropriations.

The design addressed the full scope of federal financial management functions, including:

- Check preparation in dollars with full integration and automated reconciliation of cash management and fund accounting records.
- Electronic transmission of disbursements/collections made by one accountable station for another. This ensures that charges are recorded promptly in the accounting records of the responsible organization.
- On-line fund accountability and control at any level of budgetary control designated by the management of an accountable station or mandated by Congressional limitations.
- Accountability for both direct and reimbursable program activity.
- Automated vouchering and accounts payable processing that is fully integrated with the funds control and disbursing modules. Provides automatic scheduling and management reporting on aging, number of payables outstanding and late payment penalties.
- Automated closing and archival of fully executed documents and associated transactions with a full audit trail of all transaction history.
- General Ledger Accounting, on an accrual basis, as defined to meet the management needs of the Department and the GAO.
- Transaction accounting through the use of a user maintained transaction rules table.
- Operational reporting (budget execution) of planned and actual results in terms of obligations, expenditures, and outlays by organization and program.
- Financial planning for obligations, workloads, and personnel for the coming budget year.
- Allotment accounting to meet the fund control requirements of the Anti-

Deficiency Act and management.

- Multi-year planning for obligations and outlays for the period three to five years beyond the fiscal year of the budget under review.
- Interface capabilities with other central and post level systems, including the Department's Payroll System and Real Estate Management System.
- Table driven edit and validation with security and controls for all table maintenance activity.
- Single data inputs update all associated modules to eliminate redundant keying except where required for separation of duties.
- Multiple levels of security are used to provide controlled access to the system with full identification of the individual, terminal, or interface process that initiated the action.

Reference:	Mr. Howard A. Renman Director, Office of Financial Systems (703) 875-6906
Dollar Amount:	$34 million
Time of Performance:	January 1982 to present
Performance Assessment:	All project tasks have been successfully completed to date. The integrated system has been installed at 18 locations throughout the world, and additional installations are in progress.

Benton International
Relevance of Selected Citations

Citation	Relevance to Contract
1. EPS/ATM/POS Strategy Development	• Benton International has provided consulting services supporting the development of many regional shared networks in the U.S. as well as several abroad. Served as Contract General Manager of Interlink, the largest POS network in the USA, during business formation. • Extensive knowledge and experience in EPS/POS/ATM Systems strategy/requirements and definition for range of clients from financial institutions to vendors to food retailers.
2. Systems Specifications Development and Application	• Thorough familiarity with ATM/POS Systems standards leadership in development of major national and international standards. • Comprehensive knowledge and experience in systems specifications, development, procurement, and implementation for major US ATM/POS debit networks and food retailers.
3. Turnkey Systems Implementation and Program Management	• Managed processor selection, strategic systems, and financial evaluations of product and service provider offerings for Interlink, Accel, Star, Yankee 24, Tyme. • Unparalleled knowledge of EFT technology and implementation at national to local levels through chair position on EFTA. • Process-oriented work for major financial institutions and shared networks shows ability to manage systems development process through implementation.

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Project Experience of Benton International

1. EPS/ATM/POS Strategy Development

Benton International project experience in EPS/ATM/POS development is best illustrated by several examples. Benton International functional activities in this area include:

- EPS Strategy Formulation -- includes evaluations of the current market and competitive environment, of client business objectives, of client systems and operations, definition of products/services to be implemented, cost/benefit analysis, and definition of the total business case.

- EPS Systems Strategy/Requirements Definition -- includes the functional specification of the electronic payments (and related) products/services to implement, the order of implementation, the preliminary selection of the mode of operation (i.e., in-house, third party, or hybrid), the integration of EPS systems strategy with general retail systems strategy, and personnel requirements at headquarters and store-levels. (Some of these areas are necessarily examined at a top level in the development of general strategy. In this phase they are examined in detail.)

Benton International past and current engagements in this area include:

- For a consortium of the top twelve U.S. regional ATM/POS networks, developed business analysis, operating rules, and functional specifications, and helped design and negotiate an implementation strategy for the development of a PIN-based on-line national POS/debit program.

- Network formation services from concept through equity group formation and systems specifications of the ACCEL Network.

- Electronic Payment Systems strategy development, system/provider selection, and

project implementation for a leading California supermarket chain with over 125 stores and sales of the order of $2.5 billion, and separately, with a major New England supermarket chain with over 70 stores. In addition, we have performed a number of other systems evaluations and audits of EFT system implementations, with specific emphasis on the complex subject of EFT security requirements for debit network interfaces, for other supermarkets.

- POS strategy and retailer requirements definition for Cash Station, Yankee24 network, and earlier for the ACCEL/Exchange Network.

- For a consortium of some 60 financial institutions, vendors, and regulators, identified and evaluated major barriers to progress in EFT/POS, particularly in technology, economics, and consumer acceptance, and developed detailed ten-year scenarios of futures for the U.S. payments system.

- For a group of 25 financial institutions, networks, processors, and equipment suppliers, designed and directed a study of the five-year outlook for POS/debit and other payment alternatives in individual retail segments, covering topics such as barriers to implementation, potential consumer concerns, national and industry-specific trends, and the likely business results of full implementation of EFT/POS.

2. Turnkey Systems Implementation and Program Management

Benton International functional expertise in this area includes:

Project Management -- covering the management of all organizations and resources to implement projects, in time and on budget, in accordance with the Project Plan.

Benton International views Project Management as a process management activity; the critical analytical work associated with a successful implementation is the development of the Program Plan itself. Most often, a Project Management engagement will involve as the first task the development of the Project Implementation, and System Test Plans. Further, since time is typically of the essence, it is not unusual to develop the components of the Project Plan which are required later, in parallel with the actual

implementation of some of the earlier implementation tasks.

Benton International past and current engagements in this area include:

- For the world's largest POS network (and also for a major regional ATM/POS network), served as general manager from initial conceptualization by the participating banks through the implementation of the total system. The process involved definition of market needs, agreement on service offerings, resolution of the business structure of the ownership entity, development of the justifying business case, selection of the system specification, evaluation of alternative processing vendors, development of the operating rules, and turnover to the full-time organization.

- Project management for the implementation of a variety of EFT, credit card, and general consumer banking systems in major banks, at major networks, and for several major system providers.

- Processor selection, including strategic, systems, and financial evaluations of product and service provider offerings on behalf of the Interlink, ACCEL, STAR, and Yankee24, Tyme, in the USA, and as part of larger engagements for several clients abroad.

- Policy development and process management as Chair of the EFTA Task Force on Electronic Benefits Transfer.

- Syndicated market research for EFTA on the EFT concerns and requirements of multiple segments of the retail industry.

3. Systems Specifications Development and Application

Benton International past and current engagements in this area include:

- System specification for a number of the major ATM and POS debit networks operating regionally and nationally in the US. Participation in the development of the major national and international standards (ANSI x9.2 and ISO DP8583).

- System specification development for payments products delivery systems for one of the largest national banks in the US, for a new international switch for one of the major national charge card networks, and for several credit card systems installations in major financial institution.

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Exhibit II-12

Macro International
Relevance of Selected Citations

Citation	Relevance to Contract
1. DHHS; OSAP: National Training System Community Partnership Training Program	• Illustrates ability to manage and support a large-scale ($17M) training and support contract. • Complex research design methodology for comprehensive multi-cultural integrated program. • Deployed trainers to national organizations, regional offices, state agencies and communities.
2. USDA; FNS: WIC Dynamics Study	• Research design and extensive current and retrospective data collection through surveys, case studies, interviews. • Capacity for qualitative and quantitative data analysis on descriptive aspects of benefits program operation and delivery.
3. U.S. Department of Education: Pell Grant Central Processing System	• Management of large systems contract including extensive cost analysis and development of training and system manuals. • Project developed a paper-driven system into a state-of-the-art electronic information transfer system.

Project Experience of Macro International, Inc.

Macro's role in the PW Team is to provide expertise in instructional technology and training, large electronic networks and processing applications, as well as general support in analysis and evaluation. The following three projects are representative of Macro's expertise in these areas.

1. **Instructional Technology and Training:** Department of Health and Human Services: Office of Substance Abuse Prevention. The National Training System and Community Partnership Training Program

Macro has conducted numerous contracts in the areas of instructional technology and training. Macro has employed instructional technology to develop and implement training programs for diverse audiences, ranging from state, local and federal government staff to school children. Macro's long history in providing these types of services have culminated in the award of a $27 million support contract to the Department of Health and Human Services' Office of Substance Abuse Prevention. The National Training System and Community Partnership Training Program is deploying trainers to national organizations, regional office staff, state agency personnel, and local community leaders nationwide to enhance the capacity of local communities to win the war on drugs and alcohol abuse. The aim is to promote development of enduring, comprehensive, multi-cultural, integrated community-wide alcohol and other drug abuse (AODA) planning and prevention programs.

The project has three major components: training of trainers at the state agency level, training health professionals (primarily physicians), and training of local community leaders. The training of trainers component selects state agency prevention specialists who will deliver

prevention training throughout their state systems, including local communities. The training of trainers strategy utilizes a modular approach supported by a laptop equipped with a computer projection panel to project information and graphics onto a screen. This replaces overhead projectors, flip charts, newsprint, and chalkboards. There are 10 content modules focusing on such topics as developing goals and objectives, capacity building, valuing cultural diversity, and evaluation. Each training session is conducted by 3 trainers with 24 trainees. A total of 12 trainers will train about 1,000 state agency personnel in all 50 states, Puerto Rico, the Virgin Islands, and the Trust Territories of the Pacific. A separate evaluation team will evaluate capacity building that has resulted from the training.

The second component also uses a capacity building approach. After conducting a needs assessment with the intended audiences (physicians, nurses, and mental health specialists), it was concluded that the initial training strategy should involve profession organizations in the development of materials specific to each profession, and that the training should be delivered by each professional organization to its own constituency. After achieving a working knowledge of the content, issues, and strategies, the intended audience will receive multi-disciplinary training. Macro is working with 20 national associations to develop appropriate continuing education training packages that will be delivered to audiences in the health professions (physicians, nurses, and mental health specialists.) The modules provide basic information on AODA and prevention. After providing the didactic information, an experiential format is implemented to permit each health professional reflect on how they can intervene in prevention and early identification in AODA. This is a major departure from a treatment paradigm, which is the typical in the health professions. The final component of the training package focuses on developing skills necessary to be effective in intervention. After developing the materials, each organization will train their own constituencies, through regional, state and local affiliate

organizations, who in turn will train practitioners. It is expected that in excess of 500,000 individuals will participate in this training program.

The third component of the training program focuses on training Community Partnership Grantees and other local coalitions who need support in obtaining basic information and in developing coordinated community efforts. It is designed to support local coalitions including the ministry, the police, and community groups in managing their own alcohol and other drug abuse planning and prevention programs. The training program has been designed to incorporate a multi-cultural consensus-building approach and utilizes individualized, interactive, and participatory training approaches. The outcome of this training is expected to raise the knowledge, skill levels, and organizational functioning of diverse groups, to enable them to succeed as teams, identify their own needs and service gaps, establish priorities, and enhance existing prevention programs.

This project demonstrates Macro's capabilities in managing a large scale project, implementing instructional technology and training approaches to meet the diverse needs of a range of target audiences, and to deploy numerous trainers, instructional technologists, and evaluators.

Contract Officer: David J. Eskenazi
OSAP, Contracts Management
Parklawn Building, Room 91-30
5600 Fishers Lane
Rockville, MD 20857

Project Officer: Steve Seitz
OSAP
5515 Security Lane

Rockville, MD 20857

2. **Large Electronic Data Exchange Networks:** Department of Education; Pell Grant Central Processing System (CPS)

Macro currently performs requirements analysis and software testing for the Department Of Education on the Pell Grant Central Processing System (CPS). The Pell Grant Program is the largest of the Federal student aid programs, with approximately 6 million applicants, of whom 3 million students are expected to receive awards in excess of $4.5 billion in the 1991-92 school year. This translates into tens of millions of individual transactions as applicants correct erroneous data, make inquiries, and respond to system edits.

The Pell Grant Program permits a student to apply from his high school or college electronically, to fill out a Federal form and submit it to the Central processing facility, or to submit an application to one of six Multiple Data Entry vendors, which in turn transmit the necessary data for Federal need analysis electronically to the Central Processor. The Central Processing System receives and transmits a wide variety of records, primarily through electronic transmissions, but also on paper, magnetic tapes and diskette. It interfaces with the Federal Government, the six Multiple Data Entry processors, various other Federal contractors, thousands of institutions of higher education, many state agencies and private organizations that provide financial aid services, and millions of students and their parents.

For the past 9 years under three-year contracts, Macro has provided a full range of information system development services, including design of all system functions and outputs,

development of an electronic communications network, forms design, document analysis, data editing procedures, correspondence handling systems, and application processing. Of particular relevance is Macro's role in developing the Pell Grant Electronic Data Exchange System. The Pell Grant Electronic Data Exchange System transformed the Pell Processing System from a paper-based system to an electronic system. It permits grant application data, corrections, and payment data to and from post-secondary institutions. Macro's accomplishments in developing and evaluating this system include:

- Requirements analysis and design of al mainframe related functions of the Electronic Data Exchange, including the processing of original applications, corrections to applications, and payment vouchers.
- Establishment of baseline values for cost and performance.
- Conduct of an evaluation of the costs and benefits of electronic transmissions.
- Development of a Customer Service Procedures Manual for use as a reference and a training aid.
- Quality control (QC) review of the Electronic Data Exchange process to identify areas where QC checks need to be performed and to select transactions for QC inspection.
- IBM PC Communications Program documentation review to ensure readability, accuracy and user friendliness.
- IBM PC information Exchange Interface testing to ensure transmission reception of messages, password protection, recovery/restart procedures, etc.

- EDE interface testing to ensure the following are performed in accordance with documentation: Receiving and formatting Electronic Student Aid Report (ESAR) data; ESAR correction and request errors, Electronic Payment Document errors, Central Processor informational messages and network acknowledgements; and formatting and sending ESAR corrections, request records, and EDP records.

This project, currently funded at $2,376,927, demonstrates Macro's capacity to manage a large-scale systems project. Of particular relevance is the fact that this project, like EBT in Food Stamps, moved a largely paper driven system into state of the art electronic information transfer system.

Project Officer:
Ms. Nancy Reynolds
COTR, Pell Grant Branch
Division of Program Operations & Support
U.S. Department of Education
ROB #3, Room 4636
7th & D Streets, S.W.
Washington, DC 20202

Contracting Officer:
Mr. Glenn Perry
Contract Officer
ADPAC Branch/ADP Section
U.S. Department of Education
ROB #3, Room 3674
7th & D Streets, S.W.
Washington, DC 20202

3. **Evaluation Research:** USDA Food and Nutrition Service: Supplemental Feeding Program for Women, Infants, and Children (WIC)

The Supplemental Feeding Program for Women, Infants, and Children (WIC) is one of

the most successful Federal assistance programs to low income women and children. It has been demonstrated to improve upon the pregnancy outcomes of low income women in terms of increased birthweight and head circumference. Recent research comparing WIC participants to non-participants has also shown that post-partum medical expenses are substantially less for WIC participants than non-participants. Significant savings, therefore, are accrued to the Medicaid program from improved nutrition during pregnancy fostered by WIC participation.

While the WIC program enjoys the position of a successful Federal intervention, the dynamics of the program have shifted dramatically during the last few years. State initiatives to obtain rebates from the manufacturers of infant formula have been attributed with a dramatic increase in participation in WIC. Approximately 1 million new participants, or a 30 percent increase, occurred between 1987 and 1990. While the rebates have had the positive effect of extending WIC benefits to more low income women and children, little is known about how state and local agencies have altered the delivery system to accommodate the growth.

During the period of dramatic expansions in WIC, several other forces have also exerted pressure or otherwise affected state and local service delivery. At the same time that the formula rebates occurred, there were shifts in administrative funding, a major expansion of Medicaid with the result that Medicaid eligibility now approximates WIC eligibility, shifting food prices, and requirements for increased coordination with Maternal and Child Health programs. FNS is concerned about how the rebates as well as these other factors have impacted on local service delivery and has contracted with Macro to examine WIC dynamics. Specifically, the $889,187 WIC Dynamics Study will accomplish the following:

- Determine the effects of the period of rapid growth on local WIC agencies' service delivery, including certification, food instrument issuance, health care and social service referrals, and staffing.

- Determine the impact of increased participation on the program's integration with local health care delivery systems.

- Assess the nutrition services provided to WIC participants.

To respond to these broad objectives, the study has three major components:

- A **base contract** that includes **analysis of extant data and mail surveys to a census of state agencies and half of the local agencies.** The extant data available for analysis include program participation and expenditure statistics, prior research at the early program growth and stabilization period (National WIC Evaluation), the pre-formula rebate period (Participant Characteristics-1988), and several case studies with emphases on nutrition education and funding allocations. The survey data will capture the current local services delivery, permitting analyses of how it has changed since the pre-formula rebate periods. The base contract has three areas of emphasis: analysis of extant and survey data to identify the contributions of formula rebates as well as other variables to program growth; comparisons of the delivery processes in place prior to the rebate windfall and after the windfall; and descriptions of the WIC program dynamics in 1991. The design for the base contract includes retrospective data collection on selected aspects of service delivery; a research design that takes advantage of the staggered implementation of formula rebates to permit comparisons of local agency services and operations relative to the timing of the implementation of formula rebates; and comparisons with previous research.

- **An evaluation of a computer-assisted nutrition education program developed by IBM**, to determine its management effectiveness in a quasi-experimental design paradigm. The CDC Patient Flow Analysis (PFA) System will be used to determine whether the computer-assisted nutrition education increases efficiency in service delivery in four treatment and four control sites. In addition, it will include substantiation of the effectiveness of computer-assisted curriculum

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from the literature.

- **Case studies conducted at 35 local** WIC sites, focusing on how local agencies have accommodated the massive increase in participants in the areas of integration of WIC with other services and an assessment of nutrition services. Case studies will involve two staff members on site for a week to review records and interview local WIC agency/clinic staff, local public health providers, representatives of private health care providers, and local social service agencies. The study will provide detailed, descriptive data and analyses of selected aspects of WIC service delivery, benefits and operations; data on the relationship between funding levels and program services; a description of the integration of WIC and other local services; and an assessment of nutrition services provided to program participants.

Project Officer: Ms. Denise Thomas
USDA, Food and Nutrition Service
Office of Analysis and Evaluation
3101 Park Center Drive Room 203
Alexandria, VA 22302

Contracting Officer: Ms. Elaine Lynn
USDA, Food and Nutrition Service
Contracts Management Branch
3101 Park Center Drive, Room 913
Alexandria, VA 22302

Exhibit II-13

Market Facts, Inc.
Relevance of Selected Citations

	Citation	Relevance to Contract
1.	**Evaluation of the Off-Line EBT Demonstration**	• Extremely pertinent subject matter shows experience working with FNS on EBT-related topics. • Project entailed extensive data collection; qualitative and quantitative analysis; cost analysis; and expertise in POS/EFT/EBT technology. • Highlights firm's research and evaluative capabilities.
2.	**Chicago Metropolitan Area Information Survey**	• Highlights firm's surveying capabilities. RDD telephone plus area-probability sample in-person were used. • Results of 2,850 telephone and face-to-face interviews presented in a timely comprehensive report.
3.	**Quality Control for Rental Assistance Subsidies**	• Highlights sampling methodology and firm capacity to conduct national area-probability sample with 4,800 2-hour face-to-face interviews in 104 clusters. • Market Facts is experienced at primary data collection activities.

Project Experience of Market Facts, Inc.

The materials that follow provide details of the experience of Market Facts in conducting previous projects that are highly relevant to work anticipated under this task order contract.

1. Evaluation of the Off-line EBT Demonstration

As a subcontractor to Phoenix Technology, Ltd., Market Facts is currently evaluating the Off-Line Electronic Benefit Transfer Demonstration for the Food and Nutrition Service of USDA. In this demonstration, food stamp recipients will receive their benefits in the form of electronic accounts stored on smart cards issued instead of coupons. When a recipient purchases food, the amount of the purchase will be deducted electronically from the balance on the smart card, and the purchase amount will be credited to the grocer's account. Each month the household's benefit allotment will be downloaded into its benefit card when presented at a terminal in a participating food retailer.

The evaluation will identify the costs and impacts of this new technology on recipients, grocers, financial institutions, and the Food Stamp Program. Market Facts is participating in all phases of the project from design through data analysis and reporting. Market Facts will interview stratified random samples of 1,572 food stamp households in the demonstration city, Dayton, Ohio, and a matched control site in Columbus in both the baseline and operational periods for a total of 6,288 interviews. Interviews will be conducted by telephone and, when telephone contact is not possible, in-person. Market Facts will conduct executive interviews with all grocers participating in the demonstration and will observe and time a representative sample of checkout counter transactions to assess the effects of the new technology on checkout productivity.

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Client:	Food and Nutrition Service, USDA
Contact:	Mr. Larry Carnes 3101 Park Center Drive Alexandria, VA 22302 703-756-3115
Prime Contractor:	Mr. Gary Glickman Phoenix Technology, Ltd. 6290 Montrose Rd Rockville, MD 20852 301-881-5765
Period of Performance:	September 1990 - November 1993
Subcontract Amount:	$633,919
Contract #:	53-3198-0-013

2. Chicago Metropolitan Area Information Survey

For the Chicago Metropolitan Information Center (MCIC), Market Facts recently completed the first year's work of a large multi-year study to collect information regarding perceptions and activities of respondents in the Chicago area in terms of employment, transportation, housing, education, and other key functional areas. The lengthy inter-censal period creates a need for accurate and up-to-date depictions of the objective circumstances of life for area residents. Data will be used over the long-term in decision making concerning allocation of scarce resources among public and private member organizations.

Approximately 2,850 interviews were conducted in the first year using a stratified RDD sampling method supplemented by face-to-face interviewing among non-telephone households.

The supplemental sample was designed as a multi-stage cluster random sample of dwelling units and was executed by door-to-door screening within Chicago-area zipcodes having the lowest penetration of telephones to find households that could not have been contacted by telephone.

Client:	Chicago Metropolitan Information Center
Contact:	Ms. Thais Seldess or Mr. Garth Taylor
Address:	104 S. Michigan Avenue Suite 325 Chicago, IL 60605
Telephone:	312-580-2878
Period of Performance:	7/90 - 5/92
Contract Amount:	$540,000
Contract #:	n/a

3. Quality Control for Rental Assistance Subsidies

As a subcontractor to Macro Systems, Market Facts is conducting quality control interviews with tenants of rent-subsidized housing. The goals of this project are to establish an ongoing quality control sampling plan for HUD's rental assistance subsidy programs and to draw and evaluate the first sample. Market Facts contributed to the development of data collection instruments and procedures and will conduct in-person interviews with a nationally representative sample of 4,800 households in 104 clusters throughout the nation. All respondents in this study will be low-income residents of rent-subsidized housing units, and the interviews will include very complete examinations of the income and assets of the household sufficient to redetermine

the household's eligibility for rent assistance. Because of the difficult population and sensitive nature of the interviews, Market Facts has developed a special field management structure to control the quality of study execution.

Client:	Department of Housing and Urban Development
Contact:	Mr. John Dickie
Address:	451 7th Street, SW Washington, DC 20410
Prime Contractor:	Ms. Sue Loux Macro Systems, Inc. 8630 Fenton Street Silver Spring, MD 20910
Telephone:	310-588-3180
Period of Performance:	September 1987 - November 1992
Subcontract Amount:	$1,000,000
Contract #:	HC-15170

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Exhibit II-14

Electronic Strategy Associates Relevance of Selected Citations

Citation	Relevance to Contract
1. **USDA; FNS: Feasibility of Off-Line System Applications to Food Stamp Program Functions**	• Pertinent subject matter illustrates firm's experience in working with FNS on EBT-related contract. • Exemplifies ESA's capacity for consulting on EPT/EBT issues and rich knowledge base on use of technology and techniques for EBT.
2. **Midway National Bank: Consulting Services for Ramsey Co., MN EBT Demonstration**	• Again illustrates ESA's "hands-on" role in the development of a major EBT demonstration project. • ESA has significant applicable experience consulting with financial institutions and shared networks on EFT/EBT issues.
3. **BUYPASS the System, Inc.: Conceptualization Development, and Marketing of BUYPASS**	• ESA is experienced and conversant in the POS network environment. ESA provided integral services from conceptualization to development to marketing of BUYPASS, the first national debit/credit, paperless datacapture POS system. • ESA created major innovations in design, and datacapture elements, seen as a benchmark for later systems.

Project Experience of Electronic Strategy Associates

1. **USDA: Food and Nutrition Service:** Feasibility of Off-Line System Applications to Food Stamp Program Functions

Electronic Strategy Associates was selected as prime contractor for this study that considered that considered not only off-line approached such as SmartCards but also the linkages to existing ATM/POS networks. The project required functional activities in many of the areas cited as critical to the performance of this contract, including: research design methodology; data collection and analysis; cost analysis; and technical reporting. ESA drew upon and further cultivated its knowledge and experience in the EFT/POS arena in completing this contract and contributing to the growing body of research on EBT.

2. **Midway National Bank:** Consulting Services in Support of the Ramsey County Minnesota EBT Demonstration Project

ESA served as consultant to a key financial institution involved in the implementation of EBT for integrated delivery of food stamp and AFDC benefits. Mr. Paul Coenen and ESA also provided consulting services to county-level food stamp officials and worked with local merchant groups in trouble shooting and problem solving during critical phases of the demonstration. ESA identified various options in the EFT/POS arena and offered them for consideration by the vendor and merchants. This project again illustrates ESA's "hands on" timely involvement in the EBT demonstration program.

3. **BUYPASS the System, Inc.:** Conceptualization, Development, and Marketing of BUYPASS the System

As consultants and contract employees, ESA was integral to the conceptualization, development, and marketing of BUYPASS, the first national, debit/credit, paperless data capture POS system. The quality of BUYPASS provided a benchmark for subsequent POS offerers such as VISA and MasterCard. BUYPASS supported several varieties of POS terminals and took advantage of both dial-up and dedicated communications technology. The theoretical design, data capture aspects and the system Operating Rules, all Mr. Paul Coenen's responsibilities, were viewed as major innovations in EFT and POS.

Burger, Carroll Associates
Relevance of Selected Citations

Citation	Relevance to Contract
1. West Virginia WIC Information System Network	• Demonstrates firm's capacity to provide management and information systems services in the nutritional program arena. • Involved development of federally-required APD's; a need many states cite regarding food stamps and EBT.
2. Oklahoma Public Health Information System Network	• Expands firm's capacity for MIS development to include design of multi-program integrated systems. • Experience and familiarity with state information systems—a skill critical to providing EBT support to the states.
3. Maine WIC Information System Network	• Highlights firm's ability to provide specialized procurement assistance and on-going quality assurance support. Many states indicate a need for EBT procurement assistance as time arrives. • As above, demonstrates in depth, knowledge of WIC systems design and function. Transferable knowledge of value in food stamp EBT setting.

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Project Experience of Burger, Carroll Associates

Recent engagements similar to the current solicitation include:

1. **West Virginia WIC Information System Network**

WIC data system procurement assistance and on-going quality assurance support, Department of Health and Human Resources. Includes development of federally-required Feasibility and Advance Planning Documents.

REFERENCE: Denise Ferris, Dr.PH.
WIC Program Director
Department of Health and Human Resources
(304) 348-0030

2. **Oklahoma Public Health Information System Network**

Design of multi-program, integrated statewide information system network, including WIC, MCH, Immunization and Family Planning and development of procurement documentation, State of Oklahoma, Department of Health. Includes development of federally-required Feasibility and Advance Planning Documents.

REFERENCE: Ms. Mary Piscitello
Director, Information Systems
Department of Health
(404) 271-3961

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3. Maine WIC Information System Network

WIC data system procurement development assistance, and ongoing quality assurance support to the State of Maine, Department of Human Services.

REFERENCE: Mr. Mark Byron
WIC Program Director
Bureau of Health
(207) 289-3991

<u>**Major Facilities and Equipment Inventory**</u>

The RFP for this contract requires that the offerors provide a, "discussion of the present or proposed facilities and equipment which will be used in the performance of the contract." This section is intended to satisfy that requirement. In this section we present descriptions of the facilities and equipment of the members of the **Price Waterhouse Team** that, it is anticipated, will have the responsibility for performing the portions of task orders requiring access and use of extensive data collection, computing, and reproduction facilities. The firms for which these inventories are provided are: **Price Waterhouse**, **Macro International**, and **Market Facts, Inc.**

Price Waterhouse Facilities and Equipment

1. Facilities

Price Waterhouse's Office of Government Services (OGS) is located at 1801 K Street, N.W., in Washington, D.C. Office space, which encompasses nearly three floors of the building, includes several conference rooms that can be used for meetings, presentations, and work areas. In addition, Price Waterhouse's Nationwide network of Management Consulting Services offices can provide support in most locations when the need arises.

Reproduction Department

The Office of Government Services has a Reproduction Department located within the office. This department can prepare intermediate and final reports and presentations, as well transparencies, graphics, and slides. The department has a large supply of paper, tabs, binding materials, etc. available for immediate use.

The Reproduction Department has two machines (a Xerox 5090 and Kodak 250) which can copy up to 135 pages a minute. In addition, to meet deadlines or complete large jobs, Price Waterhouse has an on-going relationship with the Balmar printing company.

National Computer Resource Center

Price Waterhouse has a National Computer Resource Center located in Tampa, Florida. This center houses seven floors of computer equipment and is virtually unmatched by any other accounting or consulting firm in the U.S. The Center offers clients, as well as all Price Waterhouse offices, a variety of resources and support.

The current hardware in place at the National Computer Resource Center includes:

- IBM 3090 Mainframe, available for timesharing for the firm and our clients
- HP 3000
- Honeywell 4303
- DEC 11/70
- DEC 8500
- DEC 2060
- Prime 12250
- Microdata Machine
- IBM System/38
- Burroughs A3

The Resource Center also hosts a variety of networks including the firm network, PWNET. PWNET is a communications network that supports the extensive data traffic between the various Price Waterhouse offices and the Resource Center.

Price Waterhouse is a security cleared storage facility, which has all of our non-current work papers stored by Archives storage; they can be retrieved with 24 hours notice.

We are confident that these facilities and resources will enable us to meet the requirements of this contract with FNS. Upon acceptance of this proposal, the Price Waterhouse will make all of its facilities and resources available to fulfill this contract.

2. Equipment

The Price Waterhouse has the capability to prepare all necessary presentation materials and any intermittent documents which may be required. These will be done on a timely basis and to the highest quality standards. In order to achieve these high standards, we have incorporated the units described below.

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Much of the work done by Price Waterhouse utilizes personal computers. We have created an environment that takes advantage of and supports these powerful tools. This support includes office space and personnel completely devoted to PC hardware and software. Many of the professional staff have been allocated individual personal computers, and they all have access to administrative staff who provide both word processing and graphic presentation support.

In addition to individually assigned personal computers, we have established three computer resource centers

- The Information Center houses IBM compatible personal computers and laser printers which are available for general use
- The Data Processing Center houses IBM 386 personal computers loaded with statistical and database software applications used to run verification checks to ensure the validity of statistical data
- The Graphics Resource Center houses Apple Macintosh computers and laser printers used for desktop publishing and the creation of graphical exhibits and presentations. We employ a full-time Macintosh Resource Coordinator and a staff of Macintosh operators to create and edit graphical designs.

Our computer equipment includes:

Hardware:

DEC MicroVAX 3600
IBM PCs, ATs and XTs
Compaq Pcs (IBM compatible)
AT&T Pcs (IBM compatible)
Toshiba Pcs (IBM compatible)
Apple Macintosh Pcs
Hewlett Packard Laserjets
Apple Laser writers
Epsen Printers
Modems, allowing mainframe hook-ups

Software:

Lotus 1-2-3
Always
Data Base Management
D-Base III plus
Revelation
Reflex
Word Perfect
Ventura Disk Top Publishing
Freelance
Gavelin
Macdraw
Microsoft Ward
Microsoft Excel
Cricket Graph
Macpaint
Ready-set-go!
SPSS-PC
NCSS
PC-SAS

Macro International Facilities and Equipment

I. Corporate Facilities - Macro International Inc.

Macro's headquarters occupy approximately 27,000 square feet of modern office space, fully accessible to persons with disabilities, located at 8630 Fenton Street in Silver Spring, Maryland. This facility serves as the firm's corporate headquarters and operations center for the Washington, D.C. area. The office includes the firm's main computer center, research library, communications equipment, and conference facilities, as well as complete support services including accounting, typing, word processing, graphics, and reproduction capabilities. The facility houses approximately 130 staff members. In addition, Macro maintains a fully staffed facility in Columbia, Maryland occupying approximately 26,000 square feet of completely accessible modern office space. That office houses approximately 75 staff members and provides complete support services for all client activities. In Burlington, Vermont, the facility occupies approximately 8,100 square feet and houses 20 full-time staff with an additional contingent of part-time survey interviewers. Again, this is a full service facility offering a complete array of services to our clients. Finally, we have a full service office in Atlanta, Georgia, situated in 3,400 square feet of fully accessible, modern office space, housing 18 staff members. Our facilities offer the following resources to all of our clients and projects.

A. Office Automation

- Macro's office automation efforts include information transfer and retrieval, personal processing, and system development activities.

- Macro maintains an HP3000 minicomputer for development efforts. This equipment is more fully described below. In addition, the corporation has approximately 250 personal computers for use by our professional and support staff, at our four offices, to use when completing assignments. Our range of Pcs includes Dell Ats, IBM PS/2s, Compaq PCs, and other IBM compatibles. All of

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our micros have a minimum of 20 megabyte hard drives, 640K memory, and 360K, 1.2 megabyte, or 1.44 megabyte diskette drives. Many of the machines have color monitors, dedicated modems, math coprocessors, mouse attachments, expanded memories, and touchscreen capabilities. All of the personal computers are connected to full function LANs, supported by a series of laser and impact printers. All products developed can be provided in hard copy and on diskette.

All of the PCs have a variety of software available as noted below. Additional software is acquired as dictated by staff and client needs. In addition, Macro currently relies on a Computer Assisted Telephone Interviewing (CATI) system to support all of its survey efforts. Further, many of the personal computers are connected to the HP3000 through a port connection switch or a direct data line. This allows the transfer of information between the micros and the mini and allows each PC to emulate an HP terminal, using the Reflections 3+ terminal emulation package.

The material below more fully describes the specific computer resources that are available within the corporation:

1) <u>Hewlett Packard 3000</u>

The computer centers at the various facilities include a number of systems that allow Macro to bring appropriate data processing resources to bear on any size task. Macro's computer capabilities provide staff members with various technical support services, including custom applications development, statistical analysis, and database storage and retrieval. For large system development assignments, there is a Hewlett Packard 3000/Series 48 minicomputer at the headquarters facility in Silver Spring. This equipment is accessible to all other offices through data communication lines.

- The HP3000/48 is essentially a development machine that is not restricted by other in-house data processing requirements. This machine is often used for developing custom applications that are designed and coded for clients, and has also served as the location for subsystem and system testing of all developed

software. New applications developed on our site may be transferred directly to client sites by phone or 1600 BPI tape (or, if necessary, cartridge).

The following elements make up the full 3000 configuration:

- HP3000 Model 48 processor
- 6 megabytes main memory
- 715 megabytes disc storage
- 1 1600/800 BPI 9-track tape drive
- 1 cartridge drive
- 2 300 LPM dot matrix printers
- 1 55 CPS Daisy Wheel printer
- 1 4800 Baud Bell 208B synchronous modem
- 1 300/1200 baud dial-up modem
- 8 intelligent block mode/character mode terminals
- 40 input/output ports

As a peripheral to the HP3000 system, Macro maintains an LXE 130 minibase station along with a 2010 truck mount wireless terminal, two 2020 wireless hand-held terminals as well as bar code generation and scanning equipment. This equipment is used to develop and test R/F inventory control applications. Macro is fully licensed by the FCC to utilize an assigned R/F frequency at its headquarters in Silver Spring, Maryland.

Macro maintains a communications capability that includes direct dial-in connectivity to the IBM time sharing network, high-speed data lines, multiplexers, and a network engine for managing data communications connections within our office. Where contract requirements have specified a need for alternative data communications arrangements, Macro has installed the necessary capabilities. Our existing hardware/ software capability allows direct communications to client HP3000 systems for file transfer, remote maintenance, and system monitoring. This can be accomplished either in system-to-system mode or remote terminal mode.

The following software is supported on the HP3000 machine:

- MPE operating system (includes editor, sort/merge, and diagnostics)
- IMAGE database management system
- VPLUS screen handler
- COBOL compiler
- FORTRAN compiler
- SPL compiler
- RJE communications package
- HPTOOLSET software development system
- HPSPELL spelling checker
- DB general
- Dictionary 3000
- Network engine
- Transact
- Miscellaneous utilities and third-party packages

2) Personal Computing and Local Area Networks

In addition to the centralized computing facility in the Silver Spring office, Macro is committed to providing desktop computing to all professional staff members in each of its offices. The summary below outlines the equipment, systems, and facilities that are currently available at each of the offices.

Silver Spring Network and Resources

This system includes three file servers that are internally bridged running on a StarLan and Ethernet network currently supporting 150 nodes with an upper capacity of 250 nodes. The network supports DOS and Macintosh equipment. Specifically, the system includes:

File server 1: Dell 486 33 Mhz
Novell NetWare 386 ver. 3.10
8 MB RAM
480 MB total disk capacity

File server 2: Dell 386 25 Mhz
Novell Advanced NetWare ver. 2.15
8 MB RAM
300 MB total disk capacity

File Server 3: Dell 386 20 Mhz
Novell Advanced NetWare ver. 2.15
4 MB RAM
150 MB total disk capacity

Peripheral Network Hardware:

- Printers

  1 HP Laserjet
  2 HP Laserjet Series II
  1 HP Laserjet Series IID
  4 HP Laserjet Series III
  1 HP Ruggedwriter
  1 HP 2934A Impact Printer
  5 Panasonic KX-P1695 Impact Printers
  2 Apple Laserwriters
  1 OTC 2140 Line Printer

- Communication Servers

  1 9600 Baud General Purpose Unit
  3 2400 Baud General Purpose Units
  1 9600 Baud Electronic Mail Gateway Unit
  1 2400 Baud Electronic Mail Gateway Unit

- Automated Tape Backups on all Server Units

- Uninterruptible Power Sources on All Server Units

- Statistical Batch Processing Machine

  Dell 386 20 Mhz
  2 MB RAM
  330 MB total disk capacity

Personal Computers:

One hundred and fifty 386, 286, XT, and Macintosh Pcs with full range of memory, storage, communication, processing, and data entry capabilities

Software:

- Network

  Deltek accounting software
  HRPRO human resources software
  CCMail electronic mail software

- Standalone

  WordPerfect 5.0, 5.1
  Samna
  Reflex
  Lotus 1-2-3 2.01, 2.2
  dBASE III+, IV
  Paradox 3.5
  Ventura Publishing 3.0
  FormTool
  Lotus Freelance
  PC Paintbrush
  DrawPerfect
  Harvard Graphics
  Flow Charting 3
  Clipper 5.01
  Turbo Pascal

- Batch Machine

  SAS
  SPSS

The Silver Spring Office serves as the main post office for the corporate-wide electronic mail system with complete communication capabilities among all Macro offices as well as the

ability to tie clients, subcontractors and independent consultants into the communication network. All message activity moves within offices instantly and between offices on communication cycles that vary from 15 to 60 minutes, depending on traffic volume and destination.

Atlanta Network and Resources

This system involves one file server running a StarLan network supporting 19 nodes with an upper capacity of 100 nodes. Specifically, this system includes:

File server: Dell 386 20 Mhz
Novell Advanced NetWare ver. 2.15
4 MB RAM
330 MB total disk capacity

Peripheral Network Hardware:

- Printers

  1 HP Laserjet Series II
  1 HP Laserjet Series III

- Communication Servers

  1 2400 Baud General Purpose Unit
  1 9600 Baud Electronic Mail Gateway Unit

- Automated Tape Backup on Server Unit

- Uninterruptible Power Source on Server Unit

Personal Computers:

Twenty 386, 286, and XT Pcs with full range of memory, storage, communication, processing, and data entry capabilities

Software:

Network

CCMail electronic mail software

Standalone

WordPerfect 5.0, 5.1
Lotus 1-2-3 2.2
Lotus Freelance
SAS
SPSS
FormTool
Publish It
Lotus Magellan
DrawPerfect
Dbase III+

Columbia Network and Resources

This system includes two file servers, internally bridged, running on a combination StarLan and Ethernet network supporting 65 nodes with an upper limit of 100 nodes and includes both DOS and Macintosh equipment. Specifically, the system includes:

File server 1: Novell system 386AE 16 Mhz
Novell NetWare SFT ver. 2.15
4 MB RAM
200 MB total disk capacity

File server 2: Novell system 386AE 16 Mhz
Novell NetWare SFT ver. 2.15
4 MB RAM
80 MB total disk capacity

Peripheral Network Hardware:

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- Printers

  3 NEC Postscript Printers
  3 HP Laserjet Series II
  1 HP Plotter
  1 Printronix P6040L Line Printer

- Communication Servers

  1 2400 Baud General Purpose Unit
  1 9600 Baud Electronic Mail Gateway Unit

- Automated Tape Backup Units on All Server Units

- Uninterruptible Power Sources on All Server Units

Personal Computers:

Sixty-five 386, 286, XT and Macintosh Pcs with full range of memory, storage, communication, processing, and data entry capabilities

Software:

- Network

  CCMail electronic mail software

- Standalone

  DBASE III+
  WordPerfect 5.0
  Lotus 1-2-3 2.01
  ThinkTank
  Paradox
  Reflex
  Harvard Graphics
  FormTool
  VP-Graphics
  RENEW
  ISSA
  Excel

Vermont Network and Resources

This system includes two file servers, internally bridged through an ethernet network supporting 55 nodes with an upper limit of 100 nodes, and includes DOS and Macintosh equipment. Specifically, this system includes:

File server 1: Compaq 386 20 Mhz
Novell Advanced NetWare ver. 2.15
6 MB RAM
600 MB total disk space

File server 2: ALR 386 33 Mhz
Novell Advanced NetWare ver. 2.15
5 MB RAM
300 MB total disk space

Peripheral Network Hardware:

- Printers

  1 HP Laserjet Series II
  1 Apple Laserwriter
  1 HP Laserjet Series IIIsi

- Communication Servers

  1 2400 Baud General Purpose Unit
  1 9600 Baud Electronic Mail Gateway Unit

- Automated Tape Backups on All Server Units

- Uninterruptible Power Sources on All Server Units

- Statistical Batch Processing Machines

  Dell 286 8 Mhz
  1 MB RAM

70 MB total disk capacity

Dell 286 12.5 Mhz
8 MB RAM
70 MB total disk capacity

Personal Computers:

Fifty five 386, 286, and Macintosh Pcs with full range of memory, storage, communication, processing, and data entry capabilities.

Software:

- Network

  CCMail electronic mail software

- Standalone

  WordPerfect 5.0, 5.1
  WordPerfect Library
  Samna
  Across
  Microsoft C 5.1, 6.0
  Turbo C++
  Manx C
  Harvard Graphics
  Lotus Freelance
  Ventura Publisher
  PC Paintbrush
  Paradox 3.5
  DBASE III+, IV
  Quattro Pro
  Lotus 123 2.01
  PlanPerfect
  Lotus Agenda
  Sawtooth Software CATI and CI2
  Clipper 5.01
  DrawPerfect
  Object Vision

- Batch Machines:

  SAS
  SPSS

B. Research Library

Macro maintains libraries of key publications in education, health, and the social sciences; legislation; and major reference works in management science at each office. The Silver Spring library's holdings includes over 2,250 volumes and 80 periodicals. The Columbia facility also maintains library facilities with holdings of approximately 700 volumes and 53 periodicals. The libraries at the other two facilities hold somewhat less. In addition to these materials, Macro also subscribes to several on-line information services, including Dialog and Compuserv. With these resources, Macro's skilled library science research staff can undertake literature searches in virtually any technical or program area.

C. Communications Capabilities

Macro maintains facsimile machines at all offices for immediate high-quality transmission and reception of hardcopy documents. Macro also has remote job entry capabilities and modems at all sites as noted above so that communications can be established with outside computers and remote use can be made of Macro's equipment.

Information sharing and data transmission within offices and across the corporation is accomplished through LANs using Novell software augmented by an array of dedicated communications servers. The system links all Pcs in all offices to each other as well as to the in-house HP 3000. These capabilities are fully described in Section A above.

D. Survey Data Processing Capabilities

Macro maintains a broad-based capacity in support of its various survey capabilities, to process large quantities of data accurately and in a timely manner. Data reduction facilities include both the processing of hardcopy forms associated with a batch entry protocol, as well as key entry, on-line data collection conducted and entered in an interactive mode. Specifically, our capabilities to reduce and process data include the following hardware and software:

- Sentry 3000 Scanner produced by National Computer Systems, the Sentry 3000 Scanner is an electronic mark-sense device that "reads" response marks on forms used in conducting surveys. The equipment has the capability to either send the information to another computer for analysis or hold the data internally. The equipment automatically holds, feeds, and processes batches of forms up to 250 sheets. The unit will scan at speeds up to 9 inches per second, although the actual speed experienced is highly dependent on the complexity of the survey instrument. The system scans custom-developed Trans-Optic Forms that are designed specifically for each survey effort. Macro maintains a staff trained in the use and maintenance of this equipment.

- Computer Assisted Telephone Interviewing (CATI) System with automated interviewing software provided by Sawtooth Software, customized to some extent by Macro personnel to support the demands of our specialized interviewing techniques, and operating in a network configuration, Macro's CATI system provides a powerful, flexible tool for the interactive collection and processing of survey response data.

The CATI system allows interviewers to work through the interview process, on the telephone, with the interviewee, while at the same time allowing the key entry of the response data as collected. Not only is the data reduced to electronic form upon receipt, but the software allows for error checking of both the substance of the responses as well as the entry of the data and has the capability to identify errors associated with the key entry process as well as conflicting responses across survey queries.

To avoid the performance degradation problems that are often associated with systems that use a centralized processor, Macro's CATI system operates on a dedicated file server (ALR 386) in a networked (Ethernet) configuration. Each interviewer works on a networked PC, thus affording the individual interviewer with the speed of standalone processing with the instant database update capability of a networked data collection terminal. The centralized database is particularly important with regard to management oversight and review of an ongoing interviewing project. Thus, the interview software resides on each of the interviewer Pcs with the database built and retained on the dedicated server. The system currently supports 32 micros as data collection terminals with an expansion planned to 48 in the fall of 1991. A complete worldwide long distance out-calling capability is integrated into the data collection and processing system with a current capacity in excess of 80 outgoing lines.

E. Braille and Large Print Capabilities

Macro has the capability to use advanced technology to assist individuals who have visual impairments. We can provide normal, large-print, and braille editions of all documents.

Macro production staff members first develop documents using industry-standard word processing and desktop publishing software. Once the model document is completed, the type size is increased to create the large-print edition.

To create the braille edition, special translation software interprets the text of the document into Grade 2 braille. (Upon request, we also can produce articles in Grade 1 and Computer braille.) Another software package formats the translated text for printing, and our braille printer embosses the final document.

F. Conference Facilities

All of Macro's offices include conference facilities capable of seating from 10 to 50 persons comfortably. Each office has at least one and as many as five conference rooms available for client use. Facilities for large meetings and conventions are readily available at nearby major hotels. The corporate office is within easy walking distance of the subway system that serves Washington, D.C.

G. Audiovisual Equipment

Macro maintains extensive audiovisual equipment such as overhead projectors, tape recorders, microphones, and an inventory of other equipment and supplies. Available equipment includes: Panasonic 10-inch VHS video player with color monitor, JVC 1/2-inch VHS videocassette recorder, JVC 3/4-inch videocassette recorder, Toshiba 19-inch color monitor, camcorder with tripod, carousel slide projector, and computer interface viewer that allows the overhead display of CRT screens in an on-line mode.

H. Other Support Services

Secretarial/Typing, Word Processing--Macro employs an experienced and highly efficient staff of 25 full-time secretaries and word processing personnel. Macro's word processing system is PC-based and uses WordPerfect 5.0 and 5.1 as its primary software. This facilitates the preparation of error-free copy, the easy incorporation of final changes and additions to any required materials or reports, and the preparation of diskettes for clients when required. Laser printers are incorporated to produce high-quality products.

Reproduction -- At the two largest offices, Macro employs a full-time key operator, trained by Xerox, who is responsible for photocopy operations. The firm has extensive in-house reproduction capabilities including an array of machines extending from a Xerox 5090, equipped with self-feeding mechanism, two-sided copying, reduction and enlargement, stapling, and glue binding features to Xerox 1012 units for low volume personal copying. In total, the company has approximately 20 reproduction units distributed throughout its various facilities. The reproduction facilities also include paper cutting, punching, and binding equipment.

Graphics -- In the headquarters facility, Macro has a full-time graphics designer with the skill and experience to produce a wide variety of high-quality displays and training devices. These products include, but are not limited to bar, flow and PERT charts; vugraphs; cover designs for manuals; and oversize and foldout displays and charts.

Our graphics department features equipment that streamlines production time and produces crisp and clean graphics:

- Dell System 210 PC with
  - Full IBM PC/AT compatibility
  - 1 MB memory
  - 1.2 MB floppy disk drive
  - 1 20 mg hard disk
  - VGA monitor
- Ventura desktop publishing
- A variety of graphics software, including PC Paintbrush, Lotus Freelance Plus, DrawPerfect, and Harvard Graphics

As this equipment is connected to the headquarters LAN and ultimately all other office LANs, graphics support can be provided effortlessly to all offices on the network.

The company also has computerized KROY lettering equipment and a wide array of manual drafting equipment.

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Market Facts Facilities and Equipment

Data Collection Facilities

Market Facts' strength is in the unique combination of professional design and analysis staff, and extensive data collection and processing capability. The data collection system encompasses:

Personal Interviewing:

- A network of field agencies with interviewers in 360 areas in the U.S., providing the capability to collect data in-person virtually anywhere.
- Senior interviewers for specialized "executive interviewing" studies.
- Central location interviewing in shopping centers.
- Specialized capabilities for individual or panel discussion utilizing in-depth interviews and focus groups.
- Interviewing throughout Canada through Market Facts of Canada, Ltd.

Telephone Interviewing:

- The Market Facts National Telephone Center (NTC) in Evanston, Oak Park and Aurora, Illinois conducts hundreds of thousands of computer-assisted telephone interviews (CATI) each year. Market Facts pioneered the use of CATI in commercial market research and maintains the most capable CATI system current technology supports.
- Local interviews in all major metropolitan areas and many smaller ones.
- A total of 144 CATI interviewing stations, working 14 hours a day, 7 days a week, gives NTC the capacity to complete even very large projects in a timely fashion.

Data Collection by Mail:

- A survey panel of over 290,000 pre-recruited households that are highly responsive to mail surveys. Demographic data on file for these households allow balanced samples to be drawn that match distributions on key U.S. Census data.

- A mail center that conducts custom mail surveys with lists specially developed for individual research project needs. In-house printing and highly automated equipment speed the processing of large mailings. The mail center processes over nine million pieces of mail per year.

Focus Group Interviewing:

- In-depth interviews with individuals and focus groups can be conducted virtually anywhere in the country on almost any subject matter.

o Special observation room facilities permit clients and study directors to monitor groups unobtrusively.

Market Facts' data collection centers generate millions of questionnaires each year that are processed in-house and tabulated at the company's own computing center. The computing center contains an IBM mainframe computer and all necessary ancillary equipment. The company has developed specialized software for tabulating survey data that is highly efficient.

Market Facts' Computer Facilities

Market Facts maintains a large-scale computing operation that has been custom-designed for survey and market research data processing. The operation has the following characteristics:

Hardware

- Central Processing Unit (CPU) - A IBM 4381-13 mainframe computer. A second processor, a General Automation mini-computer, is located at our National Telephone Center. The General Automation mini-computer has been extensively modified to operate computer interactive interviewing.

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- Disk Storage Devices - Disk drives manufactured by Storage Technology Corp. (STC) capable of storing 3,136 mega-bytes, equivalent to storing 39.2 million card images.

- Tape Drives - Six tape drives manufactured by STC. The tape drives are able to read or record densities of 800, 1600, and 6250 BPI. This allows us to handle any client tape requirement in-house.

- Printers - 1) on-line printer manufactured by STC with a rated speed of 1,200 lines per minute. 2) Xerox page printing system capable of printing one full page per second. 3) Hewlett-Packard laser printers.

- Communications - Communications equipment consists of both local and remote lines and controllers to support our needs.

Equipment in Market Facts' Washington, D.C. Office

- Eight AT&T 6300 and one Compaq personal computers (100% IBM compatible) each equipped with a 20 Mb hard disk drive.

- Four Northgate 286-12 AT-compatible computers.

- Two Hewlett-Packard Laser Jet II printers.

- A NEC P7 personal dot-matrix printer with 24 pin print-head for letter quality printing.

- A C. Itoh CI 300+ high speed line printer for printing of down-loaded tabulation from the IBM mainframe in Oak Park, Illinois.

- Rose MasterNet hardware and software that link all computers for peripheral sharing, file transfer, and E-mail.

Computer Software

Our computer system has been custom-programmed for the efficient handling of large amounts of survey data. Market Facts has developed its own software system, "Factab," to

bring together all of the elements of survey data processing.

Factab controls the entire data processing effort. It encompasses:

- Automated codesheets.
- Automated consistency-checking (cleaning) linked to the automated codesheet.
- Parameter specifications for tabulations linked to the automated codesheet.
- Complex re-codes, explosions, etc., all linked to the consistency-checking program.
- Weighted data and cell arithmetic.
- Conversions to other systems, such SPSS, SAS, etc.

The company also possesses a large private library of multivariate statistical programs. These programs include SAS, SPSS, and many developed at Market Facts for conjoint measurement, discriminant analysis, factor analysis, analysis of variance, multiple regression, analysis of co-variance, and others.

For personal computer applications Market Facts has a full collection of current software including WordPerfect 5.1, Dbase III Plus, File Express, Lotus 1-2-3, Quattro Pro, Harvard Graphics, SuperProject, TimeLine, SAS-PC, SPSS-PC and many others. These allow us to communicate effectively with clients in most commonly used machine-readable formats.

III. TECHNICAL AND MANAGEMENT APPROACH TO TASK ORDER 1.O

This section presents the **Price Waterhouse Team's** approach to providing EBT Training and Technical Assistance to the FNS headquarters and regional offices, and to those States currently moving toward implementation of EBT for food stamps. Our presentation conforms to the RFP guidelines. Section A presents relevant knowledge and understanding. Section B presents the technical approach. Section C presents the staffing and management approach.

The proposed task represents a significant undertaking by FNS. It reflects the determination to move beyond research about food stamps EBT and proceed with implementation. As FNS has indicated, there will be numerous occasions during the life of the contract where quick-turnaround research will be needed, and the **Price Waterhouse Team** is prepared to address these needs. However, Task 1.0 is appropriately viewed as the watershed task. It will provide the vehicle that shapes EBT implementation in a way that primary research is incapable of providing. Task 1.0 provides the mechanism for helping the states now embarking on EBT. Though EBT efforts are at present demonstrations, in April of 1992, the states will have the authority to proceed with alternatives to the current paper system. It is reasonable to assume that because the demonstrations embrace much of the current thinking about EBT, such as integrated approaches that serve multiple programs and maximum use of existing technology and networks, the success or failure of these efforts will strongly influence choices made by the states who have adopted a more cautious position.

The immediate task before us requires the application of a number of key ingredients. The first is the application of the highest levels of expertise in EFT, networks, and EBT technology and financial processing. This resource is available only through the **Price Waterhouse Team** in terms of Benton International, and Electronic Strategy Associates. The second is the application of advanced training and training technologies that facilitate the

development of knowledge about the complexities of EBT as well as the utility, benefit, and ease of use. Macro International provides FNS with the services of leaders in the development of appropriate and effective training. The third ingredient may be the most important, yet tangible ingredient and that is the ready acceptance of the authority and reputation of the organization responsible for the task. Price Waterhouse has this standing among the states, the financial institutions, the merchants, and the agencies in the Federal government with the most direct concern about transition to EBT. In addition to this core team, we have the research expertise needed to respond to the potential needs of states and FNS. In addition, because of the participation of Burger, Carroll and Associates, we are able to address the likely incorporation of WIC into a larger nutrition benefit delivery structure that at least five states are now actively exploring.

A. Relevant Knowledge and Understanding

In this section, we discuss a number of key areas that the training and technical assistance effort must consider in the development of training tools and provision of technical assistance to FNS headquarters, the regional offices, and the state. As stated in the RFP, the effort will focus on regional office needs and state agency needs. The regions are expected to benefit as demonstrated by effective:

- Review of state EBT APDs, planning documents, RFPs and implementation plans and plans for expansion
- Monitoring of EBT implementation and operations
- Guidance to states that is consistent with FNS and HHS policy
- Anticipation, prevention, and resolution of problems

Most of the training and assistance will be delivered directly to the regions, supplemented by significant written resources. The assistance to be provided will include direct training as well as ad hoc assistance provided by the leading experts in EBT.

The states will benefit from the training and TA as demonstrated through their capacity to effectively and independently:

- Analyze the myriad logistical, cost, technological, and human consequences of various EBT strategies
- Develop strong proposals and select appropriate contractor support
- Implement and operate EBT smoothly and efficiently
- Self-assess the functional and cost aspects of their EBT system vis-a-vis their own and federal requirements

The training and technical assistance will be delivered through four regional training sessions and through the development and dissemination of interactive training packages. Ad hoc assistance will be provided directly to states in the form of reviews and critiques developed on behalf of FNS. The key areas that training and assistance will emphasize include:

- Model EBT RFPs that will supplement existing guidance provided by FNS such as Handbook 151
- Strategies for successful merchant recruitment
- Model training for recipients
- EBT implementation checklists as well as maintenance of contingency arrangements in the event that a state must revert to a paper system
- EBT cost analysis guide

- Model and materials for training local office staff
- An EBT evaluation users guide
- Training and materials development for regional office staff addressing functionality, technical choices, cost and policy
- Four state-to-state information exchange conferences

We discuss in greater detail the first seven areas. The eighth and ninth are addressed in considerable detail in Part B, Subtask 1.2 below.

1. RFP Development Guidelines for States

At present, there are two variations in EBT implementation that the states are likely to follow. The first would be similar to the Reading demonstration, except that it would be state-wide. This is referred to as a stand-alone system and it would be implemented and operated independent of existing EFT networks. This variation would require the development of data base and communications systems, computer acquisition or adaptation of an existing system, acquisition and installation of equipment in stores, and acquisition of vendors to service and maintain the various pieces of equipment and software. Such a system could be operated directly by the state or it could be vended out to a third-party processor.

The alternative is referred to as piggy-backing. This is an EBT that is integrated with the existing EFT network(s). The development requirements of this approach are much reduced especially in the areas of telecommunications and in-store installation. It will still be necessary to modify issuance data bases to permit increased real-time access, to acquire and install telecommunications links to a network switch as well as to contract with that switch, and to acquire and install in-store equipment where it not already being used.

The two design approaches are complicated by the need to consider change to EBT not only for food stamps but also for other state-administered income assistance programs (AFDC, CSE) as well as WIC and Medicaid. The later two programs, because they incorporate specific uses of benefits (WIC has specific food purchase requirements; Medicaid covers specific types of medical costs such as drugs and health care provider costs), present a more complex implementation challenge. Thus, the acquisition process must consider the immediate and future needs associated with incorporation of other programs into an EBT environment.

The acquisition process will use competitive procurements and is most likely to be conducted in compliance with the acquisition rules set forth in FNS Handbook 151. It is unlikely that states will undertake this effort without first seeking and obtaining Federal funds (federal financial participation or FFP). Thus, each state can be expected to submit for approval:

- An Advanced Planning Document
- The results of a feasibility study
- One or more RFPs
- The contract and/or service agreement
- Other documentation such as systems plans and designs, status reports, and procurement status and selection criteria

For purposes of this task, we would anticipate developing model RFPs for both system and equipment acquisition as well as service RFPs and agreements applicable to stand-alone and integrated systems. For purposes of this discussion, we have assumed that the states to be

assisted have already received FNS/HHS approval of their APDs.[1] The process of developing model RFPs will begin with a review of the available APDs. The review should include all APDs and not those which have been approved. The purpose of the review is to determine where the states are in terms of knowledge about the system and equipment needs associated with EBT.

The first step that any state will be required to undertake is the preparation of Advanced Planning Documents (APDs) for Automated Data Processing (ADP). The APD is a written plan for acquiring ADP services, systems, or equipment and must contain the following:

- Statement of need and objectives
- Preliminary cost benefit analysis
- Personnel resource statement
- Description of the activities and methods
- Proposed schedule
- Proposed budget
- Duration of use of proposed ADP equipment and/or services
- Results of feasibility study

Next we will review existing Requests for Information (RFIs) and Requests for Proposals (RFPs) used by states now implementing EBT demonstrations. In addition, we will discuss the procurement process and outcomes with these states to determine where there have been

[1] Until recently FNS was the reviewing body for APDs but with recent efforts to integrate FSP and other state administered benefit programs (AFDC, Medicaid, CSE), the review authority is now shared with the Department of Health and Human Services (HHS).

problems and how these problems could have been avoided at the RFP stage of the procurement process. Of particular interest will be effectiveness of performance standards, scheduling, cost controls, and the extent to which state and contractor responsibilities have been met.

With respect to service agreements, the model RFPs will include the following and will conform with the revised FNS Handbook 151 which is expected later this fall. As presently stated, service agreements must include:

- The basis for use and services to be provided by the vendor as well as the functional responsibilities of the vendor and the state
- The service conditions and performance requirements
- The cost conditions and basis for the services to be provided.
- Terms for acquiring equipment in order to provide the service
- Period of performance
- Management structure
- Budget
- Functional requirements

Model RFPs for systems will include the following and will also conform with the revised FNS Handbook 151. As presently stated, systems RFPs must include:

- Procurement management plan
- A description of nature and scope which addresses the basis for use and services to be provided by the vendor as well as the functional responsibilities of the vendor and the state, service conditions and performance requirements

- Functional requirements
- Deliverables and period of performance
- Management structure
- Budget and cost requirements
- Proposal evaluation criteria

Equipment RFPs are similar in structure and content to the system's RFPs. They include support requirements, conversion requirements, system's life cycle requirements, acquisition schedules, and cost/benefit analysis and cost allocation requirements

We would expect to concentrate on EBT-specific requirements including telecommunications requirements, service agreements with networks switches and/or banks, and functionality as it relates to EFT/EBT services. As a general rule, it is desirable to include highly specific functional requirements and performance standards rather than allowing potential vendors to define these standards.

2. Recruiting Vendors

Continued merchant involvement in the Food Stamp Program in an EBT environment must be carefully considered and approached. While it is true that the current coupon system imposes burdens on the merchant, it is largely dependent upon manual processes and learned behaviors with little or no interaction with equipment. Also much of the control over the coupon transaction is within the immediate control of the merchant rather than a remotely located computer. Change to EBT at the point of sale will change the way that the transaction occurs. Moreover, because EBT is dependent upon terminals and telecommunication linkages, the

merchant is confronted with the possibility of supporting (paying for) services and equipment that are not essential to the majority of the merchants' business activities.

The change to EBT will affect different merchants differently. The larger chains are rapidly incorporated computer-based technology in the form of on-site computers serving UPC-scanning registers. These systems eliminate labor costs associated with product pricing and check-out. Many of these store systems are able to scan the bank and account codes on personal checks and credit the amount paid at the time of sale. Also, the ability to link purchase data with inventory data provides store managers with powerful product-ordering and inventory-planning tools. In various parts of the country such as California, chains have incorporated proprietary debit cards to speed the check-out process especially for customers who would normally pay by check. In these stores, the incorporation of EBT is likely to be relatively easy.

The effect of change to EBT on the small, owner-operated stores is likely to be greater because the existing technology base in the small stores is generally less sophisticated. This has two important consequences. First, the small merchant who operates largely on a cash basis is less likely to see the benefits of EBT, especially if the merchant derives a small percentage of sales income from food stamp recipients. The threshold typically cited is 15 percent or less. Second, is the need to install equipment needed to support EBT including telephone lines and the point of sale device and how the point of sale device is linked to the existing cash register equipment. While program regulations make it clear that participating merchants can not be required to acquire equipment to support food stamp redemptions, small merchants may not entirely believe this. Moreover, the small merchants may view the process as a way of concentrating food stamps in the large chain store.

At present, merchants participate in the Food Stamp Program on a voluntary basis, subject to a few requirements on in-store inventory and business practices. As EBT becomes

a reality, more wide-scale implementation places merchants in a position of determining whether to change over to the new system or cease redeeming food stamps. This is a particularly critical issue in large urban centers where few if any of the large chain stores continue to operate. A risk associated with the introduction of EBT is that it may introduce a significant skewing of in the distribution of stores authorized to redeem food stamps, especially in those areas where there are the highest concentrations of food stamp recipients. If this were to occur, then recipients would either overwhelm the remaining stores in their neighborhoods, or be forced to commute to suburban stores. It is doubtful that the program is prepared to underwrite transportation costs, however.

The Food Marketing Institute which represents a significant number of merchants has endorsed the change to EBT, but in so doing has raised a number of concerns about the effect of EBT upon merchants. These concerns form a framework about which merchant recruiting can be constructed. The concerns are contained in position papers issued by the FMI in 1989 and 1991 and include:

- Check-out lane saturation -- There is appropriate concern that food stamp recipients not be discriminated against in a systematic way. Therefore, recipients can not be directed to a sub-set of lanes. In stores electing to install POS terminals at all lanes in order to serve food stamp and non-food stamp customers alike, this is not likely to be a problem. Similarly, in small stores with a single check-out counter, this is not an issue. It is a potential problem for stores that only intend to use EBT for food stamps or who intend to install POS at selected terminals. It is also a potential problem for those states that install a separate system such as that used in the Reading demonstration -- though the current demonstrations appear to be avoiding this significant limitation to the Reading configuration.

- In-store staff training -- EBT is more complex than cash-like food stamps. While it is likely that for the foreseeable future the program's reliance on store personnel to screen purchases for non-food items will continue, EBT does add additional requirements. These requirements include proper use of a POS, PIN and balance remaining confidentiality), and explaining the new system to food stamp customers. The issue is who provides the training and who bears the cost.

- Impact of multi-program withdrawals on cash availability -- Merchants routinely cash checks for amounts in excess of purchase. However, the likely high-peak cash withdrawals that may occur in states where beneficiaries can access income benefit accounts do present problems to merchants. In situations where the POS is used like an ATM, the merchant must provide the cash. In situations where access is gained through an ATM, the ATMs may be depleted and the store manager inappropriately blamed for the problem. These situations are likely to be a problem during the initial stages of implementation when merchants have little advance knowledge about the expected demand.

- System down-time and response time -- On-line systems are dependent on their ability to communicate with centrally located switches and processors. At present, most systems are highly reliable and able to establish communications with the host and complete the transaction rapidly. However, there will be instances when POS terminals fail. In addition, there are times when telecommunications links fail or transaction times are degraded during peak usage periods. Efforts to provide fall-backs in the store include authority for the store to process a redemption for some maximum amount, telephone trouble lines (voice authorization), placing the liability for overdrafts on the store, and allowing recipients to carry a negative balance into the next benefit month.

- Uniform implementation within market areas -- Dual redemption systems -- coupon and EBT -- except under conditions of hardship places added burden on the merchants. While it is likely that states will have to implement mixed systems initially and gradually convert to uniform state-wide systems, implementation should be keyed to major market areas if this concern is to be addressed.

- Who pays for the use of in-place POS systems -- In some parts of the country, food chains are integrating POS equipment either as part of their own proprietary debit card or to allow customers to pay electronically rather than by check. While these systems are likely to be found in more affluent areas where customers are accustomed to paying in ways other than cash, stores with POS may be reluctant to participate without compensation. This is particularly true of merchants who install their own POS terminals, a pattern that is likely to continue as more and more banks reduce or eliminate merchant services.

There are, in addition other concerns raised by the merchants that must be considered when recruiting efforts are planned. Indeed, one of the major concerns raised by food retailers

is the fact that they are not involved in the decision-making process. In a coupon system, this was possible since the demands on the merchant were relatively uncomplicated and limited. However, a change to EBT shifts the issuance and redemption aspects of the program away from the local welfare agency to the merchant, particularly as it relates to the recipient. Under EBT, after the food stamp debit or smart card is issued, the recipient is likely to interact largely with the merchant except for periodic visits and contacts with the local welfare office to deal with job registration and periodic recertification of eligibility.

The initial step in successful recruiting begins with merchant involvement. There is much literature about the need to include stake-holders in any change process and the reduced success rate of imposed change. States (and the FNSROs) should be encouraged to include representatives of the food merchants on planning committees. Second, while the larger chain stores are likely to be more favorably disposed to the change to EBT, the impact on them is potentially greater because of the need to provide reasonable access for multiple check-out lanes. In addition, they are more likely to have already implemented POS technology.[2] A solution to this concern must be addressed at the policy-making level. Third, it is the smaller owner-operated stores that face the greatest incremental change in the way that they do business. Their concerns must be addressed as part of the planning process.

Another step in successful recruiting is to use merchants to recruit merchants. Merchants with experience using EBT in their stores are in the best position to relate to merchants in the language, terms, and expectations that both share. This can be accomplished through direct contact or preparation of pamphlets with "personal experience" stories. In addition, the states

[2] The large chains which are regionally based present a special problem since decisions affecting store systems and automation are likely to be centralized and affect stores in multiple states. These chains would include Giant Foods in the mid-Atlantic, Stop and Shop in New England, and Piggly-Wiggly in the south and southwest. This factor suggests the need for coordination on issues of equipment and software compatibility among adjacent states.

must obtain the endorsement of the statewide merchants organization. These organizations tend to be politically active within state government as well as exert considerable influence on member merchants.

3. Recipient Training Model

The available information on the impact upon the food stamp recipient of EBT use suggests that it is favored over coupons. The results of the Reading demonstration evaluation indicate that 77 percent of the recipients in that demonstration prefer EBT to coupons. Included were persons whom are generally thought to be less accustomed or poorly equipped to cope with more sophisticated systems. EBT was preferred for a number of reasons:

- Ease of use when purchasing food
- Virtual elimination of the time and cost of visiting the agency responsible for issuing coupons

The fact that recipients like to use EBT is a strong selling point during conversion. However, effective training needs to reflect lessons learned from demonstrations. The Reading demonstration suggests a number of strategies that lead to an orderly transition. They include:

- Advance distribution of any new identification materials -- combined with clearly stated information about benefits of EBT and the conversion from coupons to a plastic card, it eliminates delays in implementation and promotes acceptance
- Training groups of persons with shared cultural backgrounds -- persons with similar languages or other shared cultural background should be more willing to interact with trainers
- Focused training that makes maximum use of video -- video using actual recipients in a true store environment

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- Hands-on practice -- practice using actual terminals so that they become accustomed to the mechanics of using a terminal
- Distribution of written information materials -- materials that the recipient can carry with their card and use when needed

In addition, it is important to time the training to coincide with implementation. Training that is too early or too late will be less effective and may create problems especially when recipients purchase food.

Clearly these strategies make for a more effective training experience. There are, in addition, a number of other facets that any training model should address. These facets concern the actual content of the training as it relates to a more efficient system. The food stamp recipient is a critical part of this system and the training should anticipate problems that are likely to create dissatisfaction among the recipients and the merchants who will become the primary point of contact in an EBT environment. A number of the key factors are discussed below:

Remembering the PIN. The ability of the recipient to recall the PIN when making a balance inquiry or purchasing food is important. Choosing one's own PIN is one strategy that the Reading demonstration used with success. Practice in the use of the PIN and regular use are likely to overcome problems of recollection.

Tracking Balance Available. Determining the number/value of coupons left in a monthly allotment book is relatively easy because the coupons are accessible. In an EBT environment, the receipt from the previous transaction indicates the amount of remaining funds. The training should stress retention of this receipt for two reasons. First, balance-only queries are likely to be viewed as disruptive by store personnel unless there is a separate terminal. Second, repeated queries will incur transaction costs that are likely to increase the cost of operating the EBT

system. Retaining receipts is a beneficial alternative to the system and to the recipient since the receipt is available at any time and does not require a visit to a store.

Contending with End-of-Month Shortages. One factor not addressed is how recipients budget their use of their allotment over the course of a month. When coupons run out there is no reason to attempt a food stamp transaction. However, it may be that recipients in an EBT environment will not be aware of the balance remaining (see above) or may attempt to use their card, expecting that funds should be available. If prevalent, merchants may withdraw from the program or attempt to prevent this problems in ways that are inconsistent with food stamp policy. Recipient training should stress budgeting and keeping track of the remaining balance.

What To Do in the Event of System Down Time. During those times when an in-store terminal fails to connect with the intercept processor or other state system, participants and merchants alike will be forced into an atypical situation. Recipient training should prepare individual for this unlikely event, explaining how to use the hot-line or alternate procedures for processing a manual transaction.

Lost Cards. Lost cards disrupt the system by burdening the recipient and requiring the state and local welfare offices to expend time to reissue a new card, make sure that the reissuance carries through to the account data base and ensure that the old account is immediately closed. The training must stress the problems associated with card loss as well as emphasize the special or unique aspects of card possession.

4. EBT Implementation and Retroversion Checklists

Implementation checklists provide a method for structuring activities and ensuring, to the maximum extent possible, that all requirements are implemented and coordinated. The

implementation checklists for integrated and stand-alone systems are essentially the same though the parties involved will differ. In addition, it is appropriate to provide for the possibility that implementation must be halted or delayed. Without planning for this contingency, a state may find itself in a position where it cannot provide for delivery of benefits. The possibility of retroversion carries with it some costs in terms of systems documentation and maintenance, however these costs a likely to be minor in comparison with the costs associated in the absence of a fall-back for ATP and coupon distribution.

The process of developing checklists should be approached in such a way that generic listing are developed for stand-alone and integrated systems. Companion information would outline the process for making the generic checklist apply to a given state and increasing the level of detail. In addition, the checklists would incorporate persons and organizations responsible for completing the activity, the associated schedule, and signatures confirming completion. Thus, the checklists provide a critical management tool that would be used for the initial implementation as well as during the period of time when EBT is expanded to other parts of a state.

EBT implementation check lists will cover a variety of actors and functions. The actors include the state agency, the data processing facility, local welfare offices, banks and/or the network switch(es), merchants and merchant associations, and other equipment service and maintenance vendors. The following table summarizes a number of the key checklist items organized by actor and system type.

SUMMARY OF KEY CHECKLIST ITEMS			
Organization/Actor	Integrated System	Stand-Alone System	Retroversion
State Data Center Issuance Files	Switch access, peak access	Merchant terminal access, peak access	Retain dual file updating
Management Functions and System monitoring	Performance reports from Switches, stores and issuance data system, complaints	Performance reports from Switches, stores and issuance data system, complaints	
Merchants POS terminals	Compatibility	Procurement, maintenance, installation	Retain dual processing capability (coupon acceptance and office processing
Recruiting	Early input, scheduling, information sharing	Early input, scheduling, information sharing	
Training	Training development, testing, administration, follow-up	Training development, testing, administration, follow-up	
Local Welfare Offices Issuance	FSP debit card issuance (old and new cases)	FSP debit card issuance (old and new cases)	Retain ATP and issuance capability and data links to state agency.
Training	Issuance training	Issuance training	
Problem solving	System down-time, issuance delays, in-store problems	System down-time, issuance delays, in-store problems	
Start-up Assistance	Problem solving, hot-lines, on-site assistance	Problem solving, hot-lines, on-site assistance	Problem solving, hot-lines, on-site assistance
Banks Information	Transition schedule and role of switch (all banks)	Transition Schedule (merchant bank and state bank) State/Bank arrangement	Retention of coupon processing capability

SUMMARY OF KEY CHECKLIST ITEMS			
Organization/Actor	Integrated System	Stand-Alone System	Retroversion
Network Switches	Telecommunications links to Issuance data base Accuracy of access to and updating of issuance data base Acceptable access times	Accuracy of access to and updating of issuance data base Acceptable access times	N/A
Other Suppliers	Equipment leasing, delivery, installation, servicing and maintenance	Equipment leasing, delivery, installation, servicing and maintenance	N/A
Recipients Notification Training	 Information dissemination to existing clients, scheduling Training development, testing, administration, follow-up	 Information dissemination to existing clients, scheduling Training development, testing, administration, follow-up	 Information dissemination to existing clients, scheduling Training development, testing, administration, follow-up

The capacity of the system to revert back to coupons centers on ATP and coupon issuance. It is likely that banks will continue to process coupons (if not, that capacity should be included in the implementation check-list) and are not likely to require special attention during implementation. At the merchant level, rules about change making and front office endorsement and bundling will need to be reinforced. The most important component is the ATP and issuance generation and distribution system used prior to conversion to EBT. However, because change is likely not to be an all or nothing event, these capacities are likely to be retained by the state agencies and the local welfare offices in areas not targeted for EBT in the near-term.

5. EBT Cost Analysis Guide

As our informal survey of state Food Stamp Program agencies indicates, many states are concerned about the short and long term costs of conversion to and operation of EBT. Some of this concern stems from the high cost of the Reading demonstrates, even though the stand-alone nature of the system contributed substantially to that cost. In addition, while the states have made important strides in automating a number of food stamp operations such as intake and eligibility determination, case management, and issuance, EBT represents a significantly larger endeavor.

Cost/benefit analysis is needed to demonstrate that the net benefits of the new system would outweigh the net benefits of maintaining and operating the current system. Specifically, the objectives of cost benefit analyses are to:

- Identify alternative methods to meet the system objectives established
- Identify the basic costs and benefit elements for each alternative considered
- Summarize the elements identified, compare and rank the alternatives based on net costs and benefits
- Select the most feasible method for implementation

The cost benefit analyses should be cognizant of constraints that lie outside the systems being considered but have a direct impact on the system. These constraints could be categorized into three broad groups:

- Non-negative constraints; for example, overall tangible benefits should be greater than total costs during the useful life of the system

- Technological constraints; for example, new equipment should be compatible with existing state ADP systems as well as regional networks and intercept processors

- Social constraints; for example, OMB requires that all public assistance and child support issuance functions should be combined and operated using EBT

All related costs of the new project must be identified and projected over the life of the system. These costs may be fixed or variable in nature; controllable or non-controllable; one time only or recurring. Similarly, all benefits expected to accrue from the implementation of the new system must be identified. These benefits may be tangible (quantifiable) or intangible (non-quantifiable) depending upon whether a dollar value can be assigned to the particular benefit. The benefits may also represent actual increases in revenues (for example, from child support collections) or cost avoidance (reduction of administrative costs for operations). The alternative which represents the best payback in terms of recovery period and rate of return becomes the recommended alternative for implementation.

Estimating system development, implementation, and operating costs involves identifying the activities (tasks) of each of the key organizations and the costs of the resources needed to complete the task. Capital investment costs such as ADP equipment are likely to be the largest single component for stand-alone systems, though to the extent that states piggy-back, this cost may be substantially reduced, especially if they are able to make use of existing state computer facilities. Costs will also include a variety of other nonrecurring activities such as feasibility studies, procurement planning, software conversion, welfare office staff and recipient training. Recurring costs will include the cost of leasing and maintaining ADP equipment such as in-store terminals and staffing costs, travel, and contractual services such as fees for network use. Benefits will primarily be those that are quantifiable such as issuance and redemption processing cost reductions, increased efficiency and other savings. Some will recurring while others will be one-time non-recurring benefits.

The actual cost benefit analyses and comparisons for alternative approaches will require calculation of costs, benefits, net present value, cost benefit ratio, and payback period. In addition it will be necessary for the states to perform a sensitivity analysis using various levels of in-store terminal placement, installation rates by commercial POS deployers, average number of redemptions per recipient, high and low per transaction charges by networks, and different rates of implementation. Cost and benefits should be considered for the various parties in the EBT system (merchants, local agencies, recipients). In addition, costs should be presented on a per recipient basis to permit comparison with other cost/benefit analyses and cost estimates.

The guidelines on cost analysis should provide a mechanism that states can use that is both consistent with existing FNS requirements and lends itself to comparisons across states. The guidelines will focus on estimating cost alternatives, collecting accurate data during development and implementation, and periodic cost analysis.

We close this discussion by noting that Price Waterhouse has developed and routinely uses a proprietary product called the EDI Cost Benefit Calculator which uses Microsoft Windows, Toolbook, Lotus 1-2-3 and Wordperfect to provide an integrated PC-based analysis platform. This comprehensive and user-friendly tool enables corporate and government managers to efficiently gather data to quantify potential cost savings when paper documents are replaced with Electronic Data Interchange (EDI) and Electronic Funds Transfer (EFT) business transactions and payments. The analysis provided in the Calculator focuses on EDI/EFT implementation with customers, suppliers, distributors, inter-agency, MIS and governmental entities.

The Calculator uses sophisticated worksheets to compute overall costs, cost-savings and return on investment over a five year period. Evaluation of the costs and cost-savings are made more meaningful by converting future dollars to a current dollar equivalent (net present value)

in the summary reports. The Calculator focuses on four major areas for improvement including working capital, expense items, labor items and business improvements. The Calculator has been used extensively by major Fortune 500 companies. This tool will be available for use by our systems analysts.

6. Training Local Office Staff

The local welfare agencies play an important initial and continuing role in EBT implementation. Most of the intake, eligibility certification, recertification and other services provided to clients will continue unchanged. However the way that local agencies are involved in benefit issuance will change substantially. First, these agencies will be asked to carry most of the responsibility for the staged distribution of EBT cards as well as any added or changed identification documents. Second, they will be responsible for training recipients in the use of the EBT system. Third, they will provide the ongoing EBT card issuance services for new recipients. Fourth, it is likely that recipient and merchant problems and complaints about the new system will be directed to the local agencies. Fifth, while it is not clear, based on evidence from the Reading demonstration whether there are any significant organizational changes are possible, we would expect developments such as assigning staff to specialized EBT roles to occur as a result of EBT implementation. Finally, the local agencies will be required to assimilate and use new technologies in much the same way as recipients.

Training of local agency staff is likely to be divided into two discrete areas. The first is training in system use, administration, and functions. It will focus on the local agencies day-to-day EBT operations of the local agency. The second area will be the training of the recipient trainers. We would expect that most of the training of local agency staff will be done by state agency staff with some contractor assistance. It is also possible that state agency staff may do

recipient training at selected sites or in connection with initial, site-specific implementation. However, in most instances, the local agency staff will be responsible for recipient training. Some of the key factors affecting each of these training areas are discussed below.

Scheduling. Training in operations should occur before implementation and before recipients are trained. However, training should not be scheduled so far in advance of implementation or recipient training that it is forgotten. Also, in the event of scheduling delays, there should be contingency plans for supplemental or refresher training.

Who Should Be Trained. At issue here is whether it is best to train a small core of local agency staff who then train their co-workers or to provide uniform training to all local agency staff who currently perform activities that would be impacted by the change to EBT. This determination is likely to differ depending on the state in question. It will be based on established practices and the capabilities of individual local agencies. It may be that all staff involved in issuance in the smaller local agencies will be trained centrally, while only key representatives of large local agencies are trained centrally. The representatives of the large agencies would then return to their agencies and provide staff training.

Training Structure and Method. Where possible, local agency staff training should occur using agencies that have already implemented EBT. This strategy would apply to agencies coming on-line after other test sites in the States have implemented EBT. It permits the individuals being trained to observe the issuance process (e.g., using the software, the mechanics of recording recipient-specified PINs, observing the methods used to protect the system from unauthorized card assignment), as well as direct interaction between staff and recipients and merchants about system problems, balance-available queries, and other activities. In addition, the training must incorporate interactive tools such as those provided by soft-ware driven systems. These stand-alone systems provide the benefits of increased learner interest, capacity

to respond to knowledge levels, and the dissemination of a uniform set of practices and procedures not prone to the sometimes detrimental effect of trainer interpretations.

Critical Issues. There are a number of critical issues that local agency training should consider. Some of the more important issues are:

- Local agencies must protect the recipient account and integrity of the EBT card issuance process. Local agencies must observe all procedures intended to prevent fraudulent card authorizations. In addition, they must protect recipient PINs.

- Following implementation, when training is most intensive, it must be recognized that the individual clerks and case workers will have key role in training recipients who are certified after EBT is implemented. The quality of information passed to the recipient must be high. One way of supplementing the process is through the use of training video such as those we have proposed here.

- Local staff are in the best position to encourage recipients to participate and accept EBT and prevent it from working as a barrier to program participation.

- The local agencies must be prepared to operate in a coupon and EBT environment during implementation.

7. User's Guide to EBT Evaluation Results

FNS has assumed a significant role in the evaluation of EBT and cash-out demonstrations. Other agencies such as HHS and SSA have also evaluated EBT efforts with AFDC, retirement and SSI. An important capacity of this contract will be to provide tools that the States and FNS regions can use to learn from the evaluations and apply to their own implementation decision making, planning, implementation, and operations.

These evaluations address a variety of issues that will be of interest to the states including:

- Implementation problems
- Implementation and operating costs as compared to the ATP/coupon system now in place
- Effects of EBT or other issuance alternatives upon merchant costs, attitudes, training, and reshelving
- Effects of EBT or other issuance alternatives upon the recipients food buying practices, program participation, costs of participation, impact of training, system use, and system-related costs
- Effects of EBT or other issuance alternatives upon financial institutions and EFT systems costs and operations

To be effective, the user's guide will need to address a number of requirements. Because there are a number of soon to be available evaluations, each addressing specific information needs and unique implementation contexts, there are likely to be methodological variations that make summative conclusion-making difficult. Also, the fact that some demonstrations incorporate more than one benefit program or address other concerns such as enhanced recipient employability must be considered. Thus, it may be necessary to consider the results of individual evaluations separately or in groupings based on demonstration type. These types might include EBT for food stamps only, EBT for food stamps and other income programs, and cash out. Second, the guide should provide information that enables users to understand and interpret cost analysis, statistical tests of differences, and the results of more complex multi-variate modeling procedures.

It may be necessary to incorporate individual study capsulations that would include a summary, description of method, a discussion of methodological short-comings, and interpretation requirements, and a summary of the major findings keyed to the important decision points that state officials can be expected to consider. Another possible aspect of an evaluation

user's guide may be the preparation and dissemination of brief reports as evaluation results are made available by the evaluator's (and approved by the sponsoring agency).

Finally, it may be appropriate to provide the states with tools that can be used to develop their own evaluation capabilities. This supplement would permit the states to develop or improve their capacity to monitor the EBT system performance, recipient buying behavior, merchant participation and other factors that indicate the status of the EBT system.

B. Technical Approach

This section presents the technical approach for conducting Task 1.0. We have retained the three subtask structure contained in the RFP. Within each, we have identified functional subtasks corresponding to the principal activities called for by FNS. We believe that our strategy for training materials development and delivery is quite innovative and reaches far beyond traditional class-room type lectures which tend to suppress creative thinking and active involvement. Moreover, the training tools to be disseminated are interactive video systems that will be used and not read and then stored away along with the feasibility reports and implementation advice available from various sources. These materials will be prepared in Subtask 1.2 in accordance with the plan prepared in Subtask 1.1. They will be presented in Subtask 1.2 as well. Subtask 1.3 provides the opportunity for the provision of targeted technical assistance and expert consultation on an as-needed basis. In all three subtasks, we make available the leading experts in the areas of direct concern including EBT implementation, training, cost analysis, and research and evaluation. The overall structure of Task 1.0 is presented in Exhibit III-1.

The task descriptions which follow first summarize the subtask objective, the rationale for the approach being taken, and the process or procedures that will be implemented. We

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Overview of Task Order 1.0: EBT Training and Technical Assistance

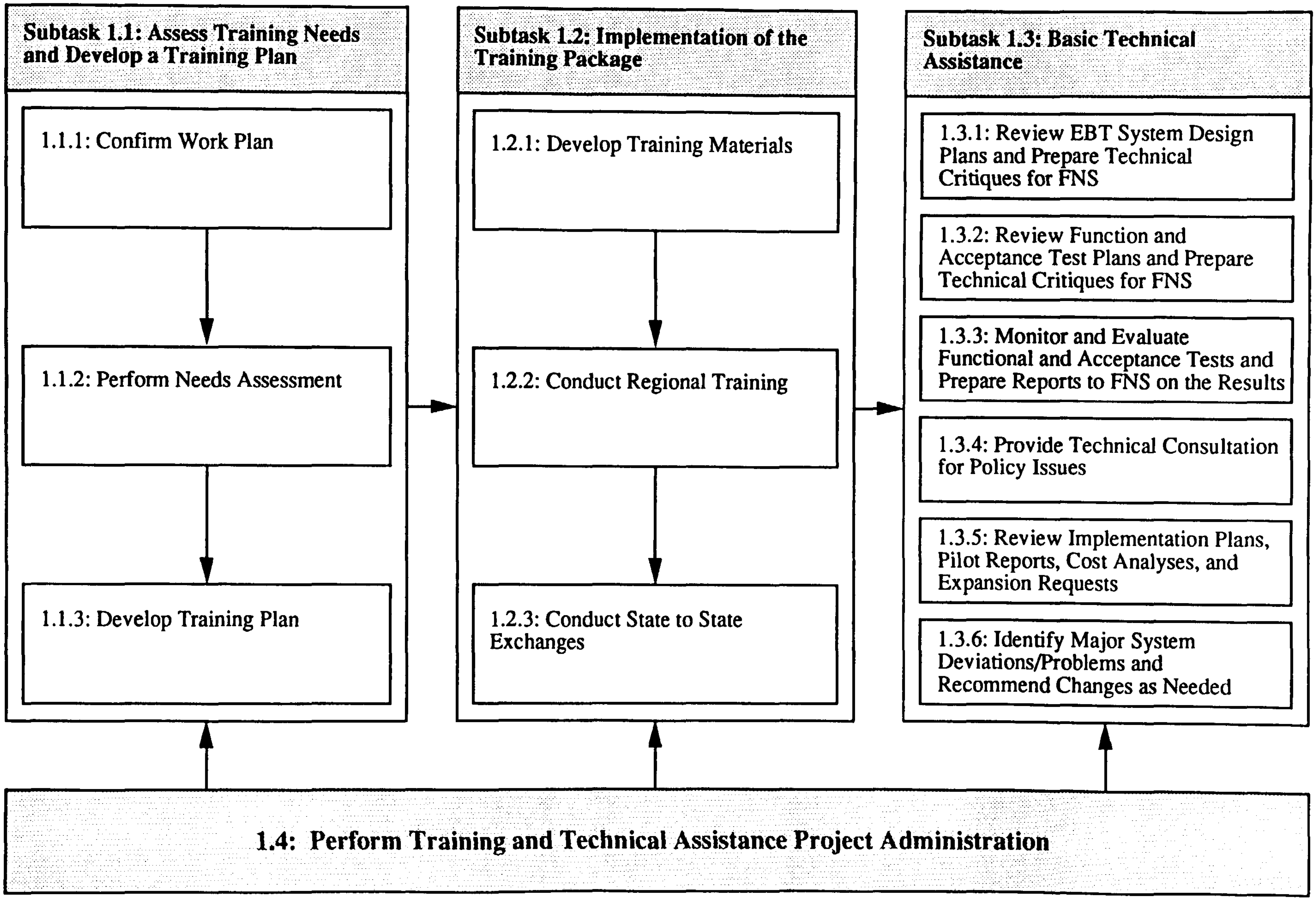


Exhibit III-1

propose a period of performance of 15 months, which is within the 18 month maximum allowable under this contract.

1. Subtask 1.1: Assess Training Needs and Develop a Training Program

Objectives: (1) Assess the Training needs of:

- FNS Headquarters and Regional Office staff
- State agencies
- Local agencies
- Food stamp recipients

(2) Develop a Training Plan

In order to facilitate the transformation of the food stamp delivery system from a paper driven system to an electronic benefit transfer system, it is necessary to first conduct a comprehensive assessment of the various target audiences and their information and training needs, and to assess what existing material might fulfill some of these needs. From that vantage point, it will be possible to develop a plan for designing and developing materials and delivering training.

Subtask 1.1.1: Confirm the Workplan

Objective: To review proposed strategies and reach consensus with FNS for the approach to conducting the project and the first task

An essential ingredient in the success of this project is to review and reach consensus with FNS on the proposed approaches, to introduce key players, and to establish lines of communications for the remainder of the project. Within one week after contract award, the **Price Waterhouse Team** will meet with FNS at FNS headquarters to initiate the project. The purposes of this meeting will be to introduce key project and FNS staff, and to review with FNS our vision of the project, and in particular the proposed plans for conducting the first task.

During this meeting the **Price Waterhouse Team** will review with FNS the Team membership, what areas of expertise each firm brings to the project, and how we will develop the optimal team to carry out each task assignment. We will ask FNS to advise us of upcoming tasks so that we can prepare the best team to respond, and to update us on any new developments that may relate to the project or the first task. The approach to Task 1 will be reviewed and discussed with FNS, as well as the staffing plan and the schedule. A major topic of discussion will be the upcoming Needs Assessment/Planning activities. We will discuss with FNS candidates from the regional, state, local and other agency staff who should be invited to attend. We will also discuss with FNS the materials that FNS recommends that the **Price Waterhouse Team** acquire. Since we have already developed a substantial EBT library, we will review with FNS the documents and reports we have and make arrangements to obtain additional material. Finally, protocol will be reviewed with FNS regarding communications between FNS and members of the **Price Waterhouse Team**.

Within a week of the meeting, the **Price Waterhouse Team** will prepare a memorandum of understanding documenting the discussions of the initial meeting.

Subtask 1.1.2: Conduct Needs Assessment

Objectives: (1) To identify the EBT information needs of the following audiences:

- FNS headquarters and Regions
- States
- Local agencies
- Food stamp recipients

(2) To develop consensus on the information needs

(3) To develop an outline for a Training Plan

The ultimate success or failure of implementing a new system of the magnitude of EBT depends a great deal on the extent to which the agencies and individuals who are to participate in the program believe that they will benefit from it. Therefore, they must develop a clear understanding of what the system is, what its' benefits are, and how it works, and what it means to them in particular.

In order for instructional designers to develop a program that will effectively address the information needs of the target audiences, it is necessary to conduct an assessment. If time and budget permitted, we would propose a strategy aimed at meticulously documenting the informational needs of each of the various populations of potential participants in EBT. Such strategies might include a nationwide needs assessment, site visits to localities in varying stages of implementing EBT, or a national teleconference of the stakeholders in EBT. Unfortunately, the time and budget for this task do not permit such a comprehensive approach to needs assessment, so we are proposing a more practical approach that builds on the existing knowledge base for EBT. Within three weeks of contract award, the **Price Waterhouse Team** will convene a Needs Assessment/Planning Meeting. We will invite representatives of the groups involved in Electronic Benefits Transfer to participate in a meeting at the **Price Waterhouse Team**

headquarters in Washington, D.C. The purpose of the meeting will be to identify the training and technical assistance needs of the respective groups and to provide feedback on the projects proposed activities and products.

Approach

We propose that the participants in the meeting represent two types of groups-- those who are involved in implementing EBT and those who are just learning about EBT. Both groups are essential. The former will represent the most knowledge of EBT and their experience with it-- what their information and training needs were, the pitfalls, the lessons learned, etc. While those with experience may remember their point of departure, their current knowledge base will affect their perception of where they "used to be." Hence, it is critical in conducting the needs assessment to also include representatives who have little familiarity with EBT. This will enable the instructional technologists obtain an accurate assessment of the information needs of those new to EBT. The participants in the meeting will be:

- FNS headquarters staff (determined by FNS)
- 8 FNS regional staff
- Representatives of other Federal agencies involved with EBT (determined by FNS)
- 4 state staff, 2 with EBT experience and 2 without
- 4 local staff, 2 with EBT experience and 2 without

To be successful, this meeting must be planned carefully, with attention paid to the role each group will play and what their knowledge base is. For instance, the FNS Regional Offices will be charged with much responsibility for providing assistance and oversight to states, yet

some of the state representatives at the meeting will know much more about EBT than some of the regional staff. Our prior experience in training programs that involve different hierarchical levels has taught us that each hierarchical level should first be trained or participate with peers before engaging in any cross-group activities. Immediately placing the regional staff with the state and local staff in a plenary session explaining EBT will erode the authority role of the region to states and states to locals. The effect will be that individuals will hold back and not participate freely.

Hence, we will plan for a three day meeting. Prior to the meeting, participants will receive a copy of the project's proposed activities and products so they will have time to review them. Assuming that participants do their "homework", the majority of the meeting time can be devoted to the creation of a training plan.

The first day of the meeting will begin with a plenary session for each group in which the project staff EBT specialists conduct a basic informational session on EBT-- what EBT is, the benefits of EBT over coupon systems, and how EBT systems work . The training will be provided separately for FNS headquarters staff, regional staff, other Federal staff, state staff, and local staff. Because this will be a working meeting, staff with experience in group processes, supported by EBT experts, will lead each group through discussions and brainstorming sessions on the following topics for each agency:

- Agencies' roles in planning and implementing EBT
- Implications for training
- Training models
- Training needs of specific groups
- Availability and suitability of existing materials

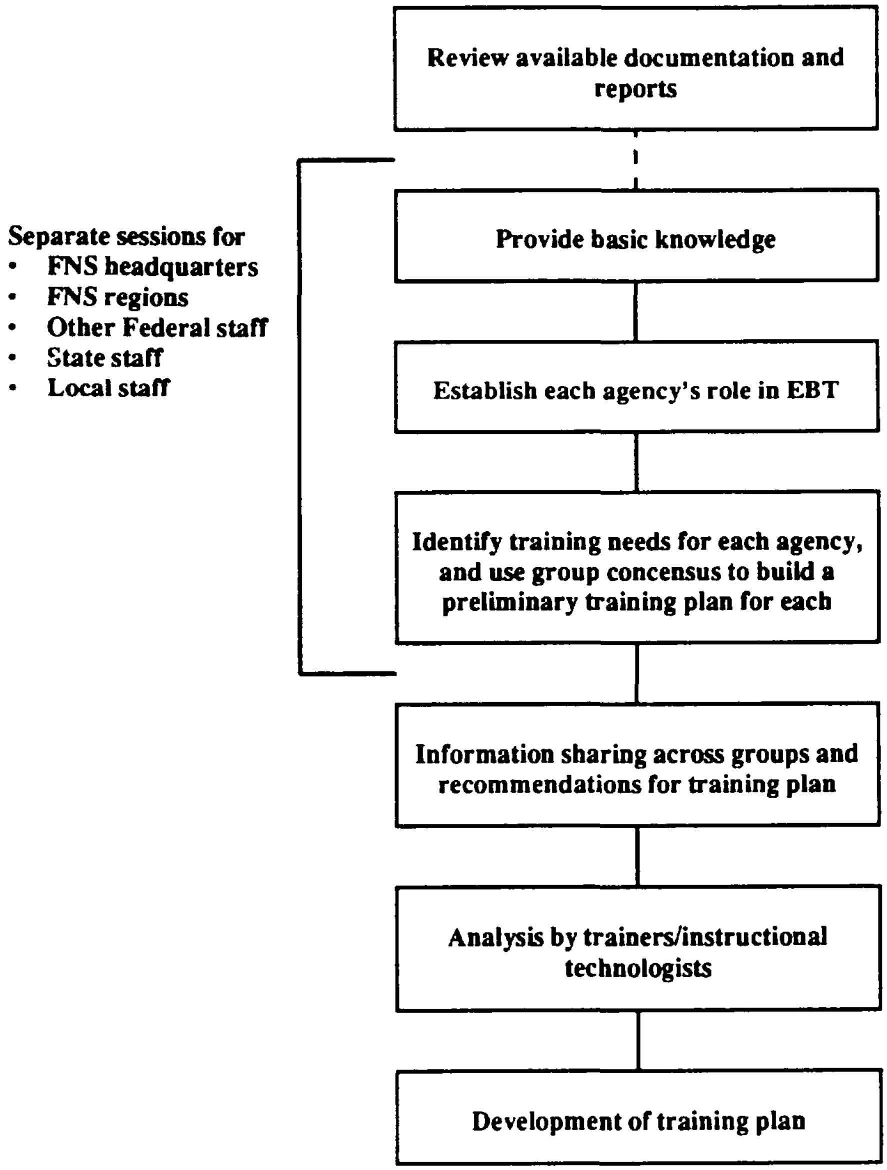
- Needs for training materials
- Needs for technical assistance
- Gaps in the needs
- Recommendations for the training plan

Project staff will use laptops equipped with electronic image projection equipment to record each's group's recommendations and to help reach consensus. The laptop replaces the use of slides, transparencies, flipcharts and newsprint for recording the group process. It stores information and allows all participants to view it as the discussion proceeds.

Following the plenary sessions, each agency group will convene again to articulate the role of each agency in EBT. The next step will be to identify the training needs for each agency, and to use group consensus to build a training plan outline.

After each agency group develops consensus, the entire group will be brought together to share information and to construct the complete training plan outline. At this time the training needs of food stamp recipients will be addressed. This will allow each group to share ideas about their own as well as other groups' training needs and how best to respond to the needs. At this point, the meeting will become a dialogue between the target audiences and the instructional designers, who will recommend the instructional and training approaches. The meeting will conclude with the outline of a comprehensive training plan. Exhibit III-2 summarizes the approach for needs assessment and developing the training plan outline.

Conceptual Framework for Needs Assessment and Development of Training Plan



Subtask 1.1.3: Develop Training Plan

Objective: Develop a Training Plan that identifies:

- Substantive Information needs of each relevant audience
- An approach to meeting those needs
- A schedule for development

In order to develop training materials that are complete, accurate and appropriate for the various target audiences, it is first necessary to have a strategy for developing and producing the products.

Approach

The output of Subtask 1.1.2 will serve as the point of departure for developing the Training Plan. It will identify the information needs of each target audience and the recommended approaches for meeting those needs. The **Price Waterhouse Team** will organize the plan according to the target audiences, and will link the information needs with appropriate training approaches. The team will explain the rationale for the proposed approach to material development and the delivery of the training. It will develop a schedule for developing all of the products and for conducting training sessions. This product will be delivered to FNS four weeks after contract award. After receipt of comments from FNS, it will be delivered in final form in Week 10.

2. Subtask 1.2: Implement Training Plan

Objectives: (1) To develop all materials necessary to build FNS Regional Office capacity to understand EBT, the functional requirements of EBT

systems, understand the technical choices and options in systems, be able to assess cost and policy impacts of different system choices, be able to review state EBT proposals and requests for expansion, and provide accurate and consistent guidance to states

(2) To develop products Regional Office staff can use to help states build the capacity for strategically planning for EBT; selecting and awarding EBT contracts; operating EBT systems; and assuring compliance with Federal requirements and state needs

(3) To develop products that can be used to train local office staff and recipients

(4) To provide intensive training to Regional Office staffs

(5) To facilitate four regional State-to-State information sharing conferences

The guiding purpose of EBT training and technical assistance is to support FNS in implementing planned change, and to build the capacity within FNS headquarters, FNS regions, and the states to develop effective strategies and implement EBT systems in food stamps. As FNS has pointed out, the target audiences and the needs of the audiences vary widely. They encompass federal headquarters, Federal regional, and state and local government agencies. Involved agencies include food stamps as well as other social welfare programs because states are trying to integrate services for their clients. They also include food stamp recipients who will have to adjust to a major change in benefit delivery services. The needs of these audiences will span the range of basic information, tools and strategies to effectively carry out EBT, and a sophisticated understanding of the dynamics of EBT systems to assure that public funds are expended prudently.

When a federal assistance program embarks on a new technology area, the risks are substantial not only because they represent change, and change is always associated with turbulence, but they are even greater because the most expertise about the technology does not

reside within the Federal agency. This project and this task will help to prepare those involved with the food stamp program to understand EBT, to plan and carry out the change from paper based systems to electronically driven systems.

Recent studies in instructional technology suggest that when individuals are required to implement new technology systems such as EBT, they adapt to the new system in phases (c.f., Dwyer, Ringstaff, and Sandholtz, 1991). These studies, plus dozens of years of combined experience in planning and implementing training programs, lead the **Price Waterhouse Team** to propose a training and technical assistance program designed to accommodate the needs of Regional and state Agencies as they go through the developmental phases of information gathering, planning, preparation, and implementation. Exhibit III-3 outlines a comprehensive training and technical assistance program comprising four stages:

1. Information Sharing
2. Planning for Electronic Benefits Transfer
3. Preparation for EBT
4. Implementation of EBT

We recognize that Stages 2, 3 and 4 will be carried out by the Regional Offices and state agencies, and that our role is to provide them with the resources and materials to support their efforts. However, we would be remiss if we didn't point out to FNS that Stages 2 through 4 are essential to the successful implementation of EBT.

To prepare the Regions and states to carry out stages 2 through 4, we will prepare materials to provide both regions and states with the capacity to fulfill their roles in EBT. For the regions, this means assuming responsibilities that have heretofore been accomplished by FNS

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OVERVIEW OF TRAINING EVENTS AND TECHNICAL ASSISTANCE

Phase	Event/Activity	Participants	Products	Outcomes
Phase I Information Sharing and Development	Regional Institutes	Representatives of FNS and Regional Agencies Project Staff	Handbook of materials and resources	Participants will understand the essential elements of planning and implementing EBT. Participants will be able to use specific resources and guides for decision making
	State-to-State Conferences	Representatives of State Agencies Representatives of FNS and Regional Agencies Project Staff	Notebook of information on conference participants and their programs; training materials in support of conference sessions; resources	Participants will learn strategies for successfully implementing EBT. Participants will be able to use the notebook to identify human and programmatic resources.
	Training for Local Agency and Client Staff*	Local Agency and Client Staff* Regional and/or State Staff	Videotape Videodisc Multimedia Training Package	Local agency and client staff will understand and interface effectively with EBT
	Technical Assistance	FNS Headquarters Regional Agencies State Agencies Project Staff	Written responses to requests for technical assistance	State and other agencies will avail themselves of the opportunity for assistance regarding specific aspects of EBT.

* Training will not be delivered by project team; only materials development under current task.

OVERVIEW OF TRAINING EVENTS AND TECHNICAL ASSISTANCE

Recommended Next Steps: FY 92-93 and Beyond

Phase	Event/Activity	Participants	Products	Outcomes
Phase II Planning	Institutes for Strategic Planning	Teams of stakeholders from each State Teams from Regional Agencies Institute leaders and Facilitators FNS Headquarters staff Project Staff	Conference notebook on Strategic planning	Each participating team will develop a strategic plan
Phase III Preparation	Training of Trainers Workshops	Representatives of State Agencies who will train Local Agency trainers Project Staff	From FY 91-92: Trainers Notebook Training Videotape Multimedia Package	Participants will acquire the knowledge, skills, and materials needed to conduct training for their constituents
	Technical Assistance	State Agency Trainers Project Staff		Trainers will have technical assistance as they prepare to conduct turn-around training
Phase IV Implementation	Training for Local Agencies	State level trainers Trainers for local agencies	From FY 91-92: Trainers Notebook Training Videotape Multimedia Package	Local Agency trainers will have the knowledge, skills, and materials needed to train colleagues and clients
	Training for Clients	Local Agency Trainers FSP Clients	From FY 91-92: Selections from Notebook or videotape or Multimedia package	Clients will have the knowledge and skills needed to participate in an EBT system

headquarters. Since EBT has only occurred in the context of demonstration projects, FNS headquarters has assumed major responsibility for administering the projects.

The passage of the 1990 Farm Bill (PL 101-624, the Food, Agriculture, Conservation, and Trade Act of 1991), however, encourages all states to implement EBT systems. The result is a potentially dramatic shift in the food stamp delivery system, and a shift in roles from FNS Headquarters to Regional Offices. While the Regional Offices have been involved in EBT through the demonstrations, their role has not been that of the lead oversight agency. It is not necessarily true that Regional staff welcome this responsibility. Hence, the project must convince Regional staff of the merits of EBT and prepare the Regions to function knowledgeably and effectively. It must recognize that the regional staffs are at different levels of acceptance to EBT, knowledge, and expertise. Materials and resources must be produced to meet a varied range of needs. It must first convince the Regions to "buy into" EBT. It must then prepare the regions to help states who are just beginning to think about EBT, as well as administer effectively to states that have more experience than the regions.

The states, too, are at varied levels of acceptance and sophistication. Some states have been operating EBT demonstrations for several years; others will initiate them soon, and based on our informal survey, some are just beginning to think about EBT and are not certain that they want to make the change. Many of them are currently overwhelmed with the challenge of integrating benefit delivery for clients, and view EBT as another unreasonable demand placed upon them by the Federal government. Hence, the materials developed under this project must not only provide states with information and resources, it must also overcome the perceived barriers to switching from paper to electronic systems.

An important strategy for overcoming barriers to the adoption of a new technology-based program is to create conditions conducive to change. These conditions include: (1) a shared

vision of the benefits of the program; (2) leadership and support from administrators for the use of the new system; (3) organizational conditions allowing professionals flexibility, time, and incentive to learn and use the new system; (4) opportunities for communication, interaction, and peer support among professionals; and (5) training and personalized support time (Kell, 1990). As FNS has planned, it is also necessary to provide on-going technical assistance.

In addition, after reviewing reports from the demonstration sites, we have come to the conclusion that the most efficient and effective way to train all the various agencies and constituents about EBT would be to create a comprehensive, yet modular package with the following characteristics:

- Easy for trainers to learn and use
- Instructionally sound
- Adaptable for varying audiences and settings
- Tailored to the instructional needs of the learners
- User friendly
- Inexpensive to reproduce

With this strategy in mind, decisions about the content, processes, and format are based on the documented needs of the populations who will be affected by the EBT system. The **Price Waterhouse Team** will involve individuals who are currently planning and implementing EBT in the projects' training events in a meaningful way, e.g., by participating in needs assessment and planning, by making presentations or leading discussions at the regional conferences, providing input on the specific content of the training materials, etc.

The model that will be used to develop training materials for this project is an adaptation of a curriculum and instruction development model created by Professor A. Edward Blackhurst

at the University of Kentucky, an internationally recognized leader in instructional technology. **Exhibit III-4** shows the model in graphic form. The following sections describe the components of the model.

We are proposing the development of print materials and a multimedia application because our experience as instructional technologists has shown that these strategies will most cost-effectively meet the needs of the various audiences that will be involved. For FNS Regional Offices and state Agencies, we are proposing **notebook formats** consisting of print materials and graphics in the form of a loose-leaf notebook. For local office staff and clients, we are proposing **multimedia videodisc technology** because it is patient, non-judgmental, and reinforcing; therefore, it can be a powerful instructional tool. Because multimedia applications must not rely on text, and are in fact enhanced by graphics, photographs, and full motion video, they are particularly appropriate for the food stamp client population, including those with limited reading ability or those whose primary language is not English. Audio and video also makes it possible to present real world situations and model behavior, thereby relieving local agencies from the time consuming task of providing every client with personal training.

The development of the notebooks, videotape, and multimedia application will result in five major outcomes:

1. Regional Office Staff will have a comprehensive resource to assist them in their state oversight and assistance activities, and they will receive comprehensive training.

2. State agencies will participate in regional State-to-State information sharing conferences.

3. Trainers from state Agencies will have high quality materials needed to conduct training for their constituents.

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Training Products Development Model

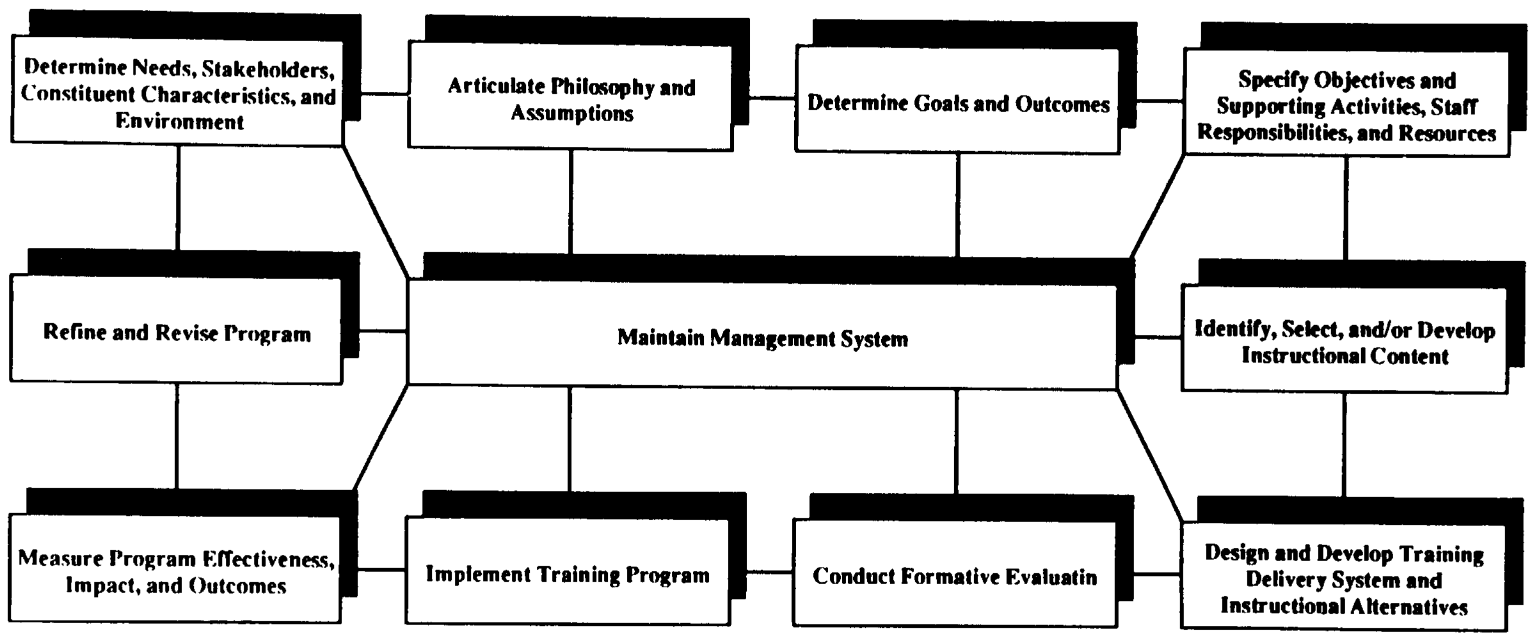

Exhibit III-4

4. Trainers representing Local Agencies will have an array of training materials needed to train their colleagues and clients.

5. Clients will have the materials they need in order to learn how to participate successfully in the EBT program.

The **Price Waterhouse Team** brings to the project an experienced staff of instructional technologists and an international reputation for developing training and media materials of high quality. Price Waterhouse and Benton International project staff demonstrate an impressive array of expertise on electronic based fund management and transfer systems. By pooling our knowledge and experience, we are able to offer a fresh approach that not only offers accurate and important information about the intricacies and exigencies of EBT systems, but is also grounded in research on the way adults learn and adapt to new technology-based systems.

It is a significant challenge to prepare the FNS Regional offices to assume responsibility for the transfer of Food Stamps from a paper based system to an electronic system in a context of service integration and other challenges. The development of instructional products for regions, states, local agencies and recipients must be carefully thought through in order to maximize cost-effectiveness, appropriateness, transferability and relevance. Our analysis of the product development needs for these audiences leads us to conclude that the following types of instructional materials are needed:

- A Regional Office Handbook, designed in a notebook format that will serve as the major informational resource for assuming responsibility for EBT
- A State Resource Notebook, designed to serve as the major informational resource for states in strategic planning, competing EBT support contracts, operating EBT systems, and assessing performance
- A multimedia resource package consisting of a trainer's notebook, a 45 minute videotape, designed to inform local office staff of EBT and how it works, a 30

minute videodisc, designed to cost-effectively train food stamp recipients in how to use an EBT system

The following subtasks describe our approach to developing these products.

Subtask 1.2.1: Develop Print Materials for Regions and States

Objective: To develop print materials for use by the Regions and States with format and content necessary to serve the various functions described in the objectives for Subtask 1.2.

The development of print materials for regions and states will be, of course, determined by the needs assessment and the training plan. Our discussion in this and subsequent tasks is meant to be illustrative of the types of materials that we think are likely to be developed.

While the Regions and states represent two different audiences, we believe that their needs will be met through modularized training materials kept in a binder. We envision that the Regional Office Handbook will contain all of the information for states, plus information that has to do with responsibilities that are Federal. Hence, we expect that the modules will consist of elements such as the following:

Modules for Regional Offices and States

Module 1: Understanding EBT-- the Technology and How it Works.

This module would provide basic information on the components of an EBT system, the participants in the system, and their roles. It will describe both on-line and off-line systems and provide charts and diagrams of the fund and information flow. It will also feature EBT for food stamp-only and integrated systems

Module 2: State Planning for EBT-- Strategic Decision-making

This module will provide information and guidance to states in developing a strategy for EBT and will cover topics including establishing goals, assessing technical and cost alternatives, developing action plans, building consensus, recruiting retailers, preparing local offices, assessing costs and benefits, etc.

Module 3: Implementing EBT-- Steps to Follow

This module will address the procedural aspects of converting from paper to plastic. It will also highlight problems and solutions based on lessons learned from the EBT demonstrations, and include a sample RFP for soliciting vendors

Module 4: Assessing Performance-- A Manager's Guide

This module will focus on desired outcomes and make suggestions for assessing whether outcomes are achieved. These will range from the performance of the system (down time, card failure) to achieving program goals (providing nutritious foods, reducing fraud and abuse).

Special Topical Modules, such as a user's guide to EBT evaluation results, tips on retailer recruitment, options for training recipients, and others

<u>Modules for Regional Offices Only</u>

Module RO1: A Checklist for Reviewing state EBT Proposals and expansion requests

Module RO2: Policy guidance-- questions and answers, with references to regulations

Module RO3: Monitoring States-- Assessing performance and compliance with program requirements

The procedures for developing the modules will begin with guidance from the needs assessment-- what does each audience need to know, and how can this information be conveyed effectively and appropriately? The **Price Waterhouse Team's** instructional technologists and content experts will proceed through the following steps:

Step 1:	Conduct Task Analysis-- Identify the needed information or the skill to be learned
Step 2:	Specify the Trainee Characteristics-- Identify the likely knowledge and skill level
Step 3:	Develop the Learning Objectives-- Clearly specify observable outcomes
Step 4:	Determine Sequence and Structure of Instruction-- for each task and the entire module
Step 5:	Identify Presentation Methods and Media-- Assure that the instruction is presented in the most appropriate form, and can be accomplished within real-world budgets
Step 6:	Review existing materials-- Select appropriate material from prior FNS-funded studies and demonstrations
Step 7:	Develop instruction-- Prepare an outline, preliminary draft, and draft product, incorporating sketches, graphics, photographs
Step 8:	Conduct Formative Evaluation-- Submit materials to sampled target audience for review
Step 9:	Revise and Finalize Materials

Throughout the process, there will be close collaboration between the EBT specialists, the instructional technologists, and the graphics artist. We envision that we will share drafts with state and regional personnel and that they, in addition to FNS, will assess the materials and provide comments and feedback.

Subtask 1.2.2: Prepare Multi-Media Products

Objective: To develop and prepare multi-media products for use by state and local offices in training local office staff and food stamp clients.

The **Price Waterhouse Team** proposes a multi-media approach to develop materials for state and local office staff to use in training local office staff and food stamp clients. All products developed by the **Price Waterhouse Team** during FY91-92 will be modular, which means that the trainers for the state Agencies can select sections according to the needs of the individuals who will conduct training at the local level. During the State-to state Conference, state Agency trainers would learn how to modify the multimedia package and rearrange the sequence in which videodisc segments are played, thereby accommodating the learning needs of certain populations, e.g., individuals with sensory impairments, those who cannot read, or those who do not speak English. For individuals who are not familiar with multimedia applications, the thought of adapting them may be intimidating, but the reality is that the software used to "drive" the videodiscs (Linkway or HyperCard) is so user friendly that modifications can be made very easily by anyone with basic computer competence. (See Appendix D for a description of tools available for this effort.)

The real power and beauty of the training materials developed in FY 91-92 will be evident at the local level where they can be used to train clients. The multimedia package, in particular, can be more effective than traditional lectures or demonstrations because it is interactive, i.e., the learner is in charge of determining what he needs to know and the order in which he wants to learn it. Consider an example where a client understands the basics of how the EBT system works, but wants information about PIN numbers. Rather than sitting through an hour-long lecture and demonstration conducted by a Local Agency trainer (a waste of time for both the trainer and the client), he could walk up to a multimedia station (microcomputer, television monitor, and videodisc player), push a few keys and watch a short film section from

the videodisc. The videodisc can also be programmed to include a self-assessment, with results stored for review by local office staff.

The use of multimedia will also be more cost effective than traditional training sessions because the local agency will not be required to spend as much money for staff time or equipment with the addition of a $100 piece of equipment, any IBM-XT equivalent can be used. In fact, once the initial wave of training clients for the system is completed, one part-time staff member could monitor the multimedia-based training for new clients, as compared to the two full-time staff suggested in one published report.

Although we firmly believe that multimedia is the most desirable and efficacious way of training clients, we also recognize that not everyone shares our enthusiasm for technology. For that reason, the trainers' notebooks and videotape developed during FY 91-92 will accommodate traditional approaches to training clients.

The following discussion describes our current thinking for the development of three products targeted at local offices and clients: a trainers' notebook of materials and instructional strategies; a videotape to accompany the trainers' notebook; and a multimedia package comprising of an interactive videodisc and software application.

The trainers' notebook and accompanying videotape will be designed for use by (a) trainers for state Agencies and/or (b) trainers for Local Agencies who will train their colleagues and clients. The notebook and videotape can either be used as an "off-the-shelf" product or as the basis for training-of-trainers workshops in which a core group of trainers could receive training from the Regional Office or state to use the materials in conducting turn-around training for Local Agencies or other groups. The training-of-trainers approach would be preferable

because it enhances the likelihood that the instructional integrity of the materials would be maintained from one training session or trainer to the next.

Trainers' Notebook. The **Price Waterhouse Team** staff will develop and produce the trainers' notebook. The notebook will be a large three-ring binder of printed materials, including:

- Content information about EBT
- A script of training strategies
- Learning activities
- Transparency masters
- Checklist for planning a turn-around training session
- An evaluation instrument
- Resources
- Suggestions for adapting training for specific audiences, e.g., local agency trainers, food stamp clients, retailers

The determination of the exact topics covered in the training materials will depend to some extent on the outcomes of the needs assessment conducted during Task 1.1. Exhibit III-5 is a sample of a Table of Contents for the Notebook.

Videotape. Research on learning styles indicates that most people are visual learners, i.e., they are more likely to remember information that they see than information they hear. Video and graphics presentations are also more appealing and motivating than audio-based presentations. Therefore, in an effort to maximize the impact of the training materials, the **Price**

Exhibit III-5

TABLE OF CONTENTS FOR TRAINER'S NOTEBOOK

- What is Electronic Benefits Transfer (EBT)?
- Benefits of Electronic Benefits Transfer
- How On-line and Off-line Systems Work
- Electronic Funds Transfer
- How to Use EBT Equipment (e.g, terminals)
- Administrative Changes
- Authorization
- Roles of Agencies, Contractors, Banks, and Retailers
- Local office EBT functions
  -How Benefits are Issued and redeemed
  -Roles of Individuals in the operation
  -Recipient Intake Procedures
  -Case Management
  -Hotlines
- How to Train Clients
  -Training materials
  -Training schedules
  -Print materials
  -Media
  -Facilities
  -Equipment for training
- Trouble shooting
  -Workstation response times and reliability
  -Responding to clients' problems
  -Impact of EBT on workload
- Retailer recruitment (optional because vendors often provide service)

Waterhouse Team will work with a production company to develop a 45 minute videotape. Designed as a companion piece to the trainers' notebook, the videotape will be divided into segments that illustrate concepts corresponding to the concepts presented in the modules. For example, a three minute film segment showing a food stamp client using a terminal at a check-out counter would demonstrate the concepts presented in the module on How to Use EBT Equipment. Or, a three minute segment on PIN numbers would accompany the module on Authorization. Because the videotape will be segmented, trainers will be able to select the sections they need for a particular type of training format or audience. Exhibit III-6 shows sample videotape segment topics.

The methodology used to develop the videotape will be the same as that described for the development of all of the project's training materials, with the addition of the creation of a comprehensive design document that provides specific information on (a) the topics covered in the videotape, (b) the content of specific video segments, and (c) flowcharts for sequencing of the film footage (what happens when). Using this information, the instructional designers will draft storyboards for each segment. Storyboards contain a gross outline of a film segment and may include a drawing of each scene with directions for the length of the segment, audio and visual content, camera angle, etc. From the storyboard, the instructional technologists will draft a script. Scripts detail not only characters and content, but gestures, voice intonation, and motivation. They may also specify the use of text, graphics, voice, music, and sound effects.

The Director from the production company, in collaboration with project staff, will make decisions regarding camera placement, transitions, and other technical details. Following review to ensure that the final tape from which the master videotape will be created is in agreement with our specifications. Multiple copies of the videotape will be made, in compliance with instructions from FNS Headquarters.

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Exhibit III-6

SAMPLE VIDEOTAPE SEGMENTS

1. Introduction to EBT, its benefits, and how it works

2. Functions of the benefit card and the Personal Identification Number (PIN)

3. How to shop with the benefit card

4. Knowing where to shop (retailer roster)

5. Taking care of the card

6. Use of the alternate shopper card

7. The manual purchase procedure

8. How to track and check the account balance

9. How to handle problems with the card

   -How to Get a card
   -Purchases by members of the household
   -Purchase size
   -What to do if you run out of benefit funds
   -What to do if your purchases are rejected
   -What to do if you forget or lose your PIN number
   -What to do if your card is lost, stolen, or damaged

10. Review of key concepts

Macro International, a member of the **Price Waterhouse Team**, has worked with several production companies to produce videos for other projects, and proposes to compete a production subcontract after award of this contract instead of proposing a production company as a subcontractor at the present time. Until the needs assessment is completed and the training plan is agreed to, it is premature to provide specifications for the production company. We envision that the footage will be produced in the studio and may also include location shooting at demonstration sites. Arrangements will be worked out with FNS and the demonstrators to obtain the necessary footage most cost effectively.

Multimedia Package. Studies comparing videodisc-based instruction with traditional instruction show that students learn 30 percent faster and cover 20 percent more content with interactive videodisc than with traditional instructional methodologies; retention of content is 26 percent higher, and test performance is 23 percent better. Research also indicates that although the development of interactive videodiscs costs more than the development of traditional instruction, development costs for videodiscs are usually recovered, and the overall cost of instruction is greatly reduced (Marszalek, 1990).

The use of multimedia will also be more cost effective than traditional training sessions because the local agency will not be required to spend as much money for staff time or equipment. In fact, once the initial wave of training clients for the system is completed, one part-time staff member could monitor the multimedia-based training for new clients, as compared to the two full-time staff suggested in one published report. Consider an example where a client understands the basics of how the EBT system works, but wants information about PIN numbers. Rather than sitting through an hour-long lecture and demonstration conducted by a Local Agency trainer (a waste of time for both the trainer and the client), he could walk up to a multimedia station (microcomputer, television monitor, and videodisc player), push a few keys and watch a short film section from the videodisc.

Moreover, interactive videodisc-based training offers several advantages over traditional methodologies, including:

1. The learner is actively engaged in instruction
2. The learner controls the pace of instruction
3. Trainees learn faster and retain more
4. The training message is consistent across trainers and locales
5. Training can be offered on-site
6. It is more cost effective

Although the multimedia package can be used by professionals in state and Local Agencies, its primary audience will be food stamp clients. The content of the videodisc will be drawn from (a) graphics and (some) text materials developed for the trainers' notebook, (b) full-motion video from the videotape, and (c) other appropriate training materials, such as slides and photographs that were developed for the demonstration sites for new EBT programs.

Videodiscs can store 54,000 frames of information, the equivalent of a half hour of film. But, in addition to film, it can also store still frames, such as photographs of aisles in a grocery store with a customer making decisions about what he can and cannot buy through the program (frames 45102 to 50230), followed by a clip showing a client at the check out counter, using the EBT terminal (frames 12765 to 14822). Finally, the viewer would be given an option to review any of the information presented or to go back to the main menu to make another selection. These same film clips could be arranged in a different sequence for another module.

A major advantage of videodiscs is that they are much less fragile than computer discs or videotape. However, once the content of the disc has been "pressed," it cannot be changed. Therefore, careful planning of the content is essential.

One of the most time consuming tasks will be the preparation of the master videotape, because it must contain the sections of the film footage of the trainers' videotape that will go onto the videodisc, plus text, voice, graphics, and sound. **Price Waterhouse Team** staff will work with the production company to edit the contents of master videotape. The videotape will then be sent to a laserdisc company that will cut a "scratch" disc. After the scratch disc has been evaluated and approved, a master disc will be cut, from which inexpensive copies can be made.

While the videodisc is being produced, staff will use an authoring software program to develop the instructional modules that will be used for training. At present, we plan to use Linkway, an MS-DOS based software program that retails for about $100, the **Price Waterhouse Team** will create a run-time application that accesses the videodisc. ("Run-time" means that the user does not have to have a copy of the Linkway program in order to run the application that drives the videodisc.) Because many food stamp recipients do not read well, instruction will rely on visual images or sound tracks whenever feasible. Sound tracks will be in English, but second languages can be added. If, at a later date, an agency wants a second language track added to the videodisc, we will facilitate their efforts by providing instruction on how to create a HyperCard version of the driver. We realize that such activities are beyond the scope of this project, but they would be very useful tasks for future projects.

During the state-to state Conferences, state agency trainers will learn how to modify the multimedia package and rearrange the sequence in which videodisc segments are played, thereby accommodating the learning needs of certain populations, e.g., individuals with sensory

impairments, those who cannot read, or those who do not speak English. For individuals who are not familiar with multimedia applications, the thought of adapting them may be intimidating, but the reality is that the software used to "drive" the videodiscs (Linkway or HyperCard) is so user friendly that modifications can be made very easily by anyone with basic computer competence.

Subtask 1.2.3: Convene Regional Workshops

Objective: To plan and hold four regional workshops to assist Regional personnel in making informed decisions about EBT.

After developing the Handbook, and using the outcomes of the Task 1 planning meeting as a guide, we will plan and implement four regional institutes that will offer Regional personnel specific information that will help them make informed decisions about EBT. We use the term "institute" to convey the notion that, in addition to listening to experts' presentations, participants will be actively engaged in discussions, and they will work collaboratively or individually on instructional tasks.

Although the nature and number of topics selected for the institutes may be modified somewhat, to reflect input from the initial Needs Assessment/Planning Meeting in Subtask 1.1 and FNS staff, we anticipate that the following content will be addressed (at minimum):

- Functional and performance requirements of EBT
- Choices of Technology
- Cost Issues
- Program Policy Issues

- Developing a Test Plan
- Implementation Requirements and Strategies
- Communication among Agencies
- Organizational changes necessary to implement EBT
- Coordination with Retailers and Banks
- Security and Vulnerability of Systems

Institute participants will be FNS Regional staff. Institute leaders will be experts in planning and implementing EBT systems, including staff from the **Price Waterhouse Team**.

Each participant will receive the Regional Office EBT Handbook developed by the **Price Waterhouse Team**. In addition to informational materials supporting each topic addressed during the institute, the Handbook will serve as a resource for future reference. In addition to the Handbook, we will utilize the electronic image projection equipment in conjunction with laptop computers to present information and to record input from the participants. The projected information will be subsets of the visual material contained in the Handbook. Other "material" for the institutes will include EBT equipment, including examples of cards and the stations used by various vendors.

Planning and implementing the four institutes will require close collaboration among Food and Nutrition Services, and members of the **Price Waterhouse Team**. FNS staff will be involved in the final selection of topics, trainers, and learning activities. **Price Waterhouse Team** staff will be charged with planning and implementing the logistical and procedural components, such as selecting and making arrangements for facilities, sending announcements to agencies, registration, developing and producing Handbooks, evaluating the institutes, and summarizing and reporting the results. Price Waterhouse and Benton International staff will

provide content area expertise related to the institutes' instructional activities and materials, especially components relating to systems design, functional requirements, technical choices, cost issues, and policy issues.

Subtask 1.2.4: Convene State-to-State Conferences

Objective: To plan and convene four state-to-state regional conferences for sharing information among state Agency personnel, and featuring states that are successfully planning and implementing EBT.

The **Price Waterhouse Team** will plan and conduct four State-to-State regional conferences for information sharing. These conferences will feature states that are successfully planning and implementing EBT. Conference activities will be designed to enhance a two-way flow of information among state Agency personnel, i.e., to provide a forum for those who are implementing EBT to share their positive experiences and help others avoid possible pitfalls, and to offer an opportunity for those who are beginning to adopt EBT systems to ask questions and air possible concerns.

At this time we envision that the conference sessions will address the following topics:

- Stages of preparing for an EBT system:

  -Determining a system design
  -Developing a system prototype
  -Testing the system
  -Implementing the system

- Strategies to Avoid Problems

  -Defining stakeholders' roles and responsibilities
  -Developing a model for communication and problem solving
  -Providing a Hotline
  -Providing teams of facilitators

- Strategies for Managing the Development of an EBT system

- Developing a State Plan for Training

  -Managers
  -Data Center Employees
  -Computer Operators and Supervisors
  -Production Control Staff
  -Reconciliation Staff
  -Retailers
  -Banks and Clearinghouse
  -Local Agencies
  -Clients

- Resources for training local office staff and clients

  -Exhibition of training materials available from demonstrations
  -Exhibition of the videotape and videodisc multimedia package developed in Subtask 1.2.2

As Exhibit III-7 shows, the agenda for the three-day conferences will feature a combination of formal presentations, question and answer sessions, and roundtable discussions during which participants can raise issues that are of particular importance for their states. To further enhance information sharing, the conference agenda will include an optional, informal Show and Tell session that will be held during the early evening of the first day. Conference attendee will be invited, but not obligated, to use this opportunity to share information and products related to their EBT programs and endeavors. This will <u>not</u> be the same as the formal exhibition of local agency/client training materials.

Price Waterhouse Team project staff will mail letters of invitation and registration information to the individuals and agencies expected to attend. As is the case with the institutes, there will be no registration fee for the conference, but participants or their agencies will cover their travel costs and per diem.

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Food and Nutrition Services Conference Format (Example)

	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00
Wednesday									Registration		Social	Dinner and Keynote Speaker	
Thursday	Continental Breakfast	Plenary Session: Featured Speaker with Q & A	Break	Concurrent Sessions	Round Table Lunch Seating according to topical interests; moderator leads discussion		Concurrent Sessions	Break	Concurrent Sessions	Small Group Discussions (optional)	Show and Tell		
Friday	Continental Breakfast	Plenary Session: Panel Discussion with Q & A	Break	Concurrent Sessions	Round Table Lunch		Concurrent Sessions	Break	Concurrent Sessions				
Saturday	Continental Breakfast	Plenary Session:	Break	Brainstorming: Next Steps	Evaluation and Wrap Up								

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Upon receipt of the registration form, staff will send a letter of acknowledgement and a form which asks for the following information:

- Name and address of conference participant
- Name and address of participant's agency
- A description or abstract of the agency's current status vis a vis EBT
- EBT related products available through the participant's agency, e.g., sample RFPs, evaluation guidelines, implementation plans, training materials, etc.
- Lessons the participants have learned about EBT that they would like to share or particular issues that they would like have addressed by conference participants.
- A list of topics from which they can choose their preference for Round Table Lunch, Small Group Discussion, etc.
- Hotel registration card.

Project staff will compile and add this information to a notebook of materials supporting the conference sessions, such as copies of handouts, overhead transparency masters, and resource materials. The three ring binder is the format of choice because it allows participants to add, delete, or move information as they deem appropriate. This will be sent out in advance of the conference, or made available at registration.

3. Subtask 1.3: Basic Technical Assistance

Objective: To provide ad hoc technical assistance to FNS within the available resources.

The objective of this task is to make available a broad range of technical expertise to FNS or agencies identified by FNS. It is expected that this TA will be required to address the needs of single states as well as cross-cutting needs of multiple states. We have assumed, based on the fact that the task statements indicate that FNS is to be the recipient of review and consultation assistance that most of the work will be done in the office. The exception is direct involvement monitoring functional and acceptance testing on site.

We have organized the range of activities identified by FNS as individual subtasks, recognizing that there will be instances where it will be necessary to conduct multiple activities (e.g., review the design plan and review functional and acceptance test plan for a state). In each subtask we describe the types of review and monitoring activities we would expect to provide. In general, we have placed the greatest emphasis and resources in the first and second subtasks. We plan to work closely with FNS to identify the known assistance requirements and will work closely with FNS staff in this regard. We are, however, concerned that the demands on this task are potentially open-ended. EBT implementation is a complex process. The technical assistance provided to FNS in this area must be of the highest quality.

Subtask 1.3.1: Review EBT System Design Plans and Prepare Technical Critiques for FNS

The **Price Waterhouse Team** will review the draft and revised system design document prepared for each assigned project, provide written comments to FNS on design strengths and weaknesses, and propose solutions to problems when appropriate. We will review the

consolidated version of interim design products produced in the design phase. The team will assess, and where appropriate incorporate revisions to the structure as necessary.

As part of the review, the **Price Waterhouse Team** will, at a minimum, ensure that the following details have been adequately specified:

- Screen and report layouts (including run totals, control reports, etc)
- Vendor procurement
- Audit and control settings
- Customized package program specifications
- Development environment requirements
- Data creation requirements
- Cross reference and system tracking requirements;
- Integration and conversion requirements.
- Access security at all levels
- Physical security; and
- Operation schedules.

The team will conduct a "walk-through" of the design specifications to identify and resolve discrepancies, omissions, and logic errors.

1.3.2 Review Functional and Acceptance Test Plans and Prepare Technical Critiques for FNS

The **Price Waterhouse Team** will review the draft and revised test documents prepared for each project and assess strengths and weaknesses and provide recommendations for improvements.

We will draft a working guideline of system acceptance criteria (two to three pages). The system acceptance criteria should be derived from the agreed design specifications. The criteria will enable us to properly review the functional and acceptance test plans. The **Price Waterhouse Team** will work with FNS to develop criteria which must be clear, explicit and verifiable. For example, when reviewing functional test plans, a criterion which states "meeting user needs" is to vague. Criteria is developed so that the tests may be properly measured against FNS requirements. Vague or inexplicit acceptance criteria can lead to the risk of defining a system that will be difficult for developers to complete. There is no single acceptance testing approach that is appropriate for all situations. However, the **Price Waterhouse Team** will review the plans for strengths and weaknesses in performance areas. Some areas of performance to assess include:

- The peculiar capabilities of the system that are most critical to the FNS organization.
- The systems response to varying volumes of transactions. A system may operate effectively at average volumes, but not effectively during peak periods because it was not designed or test plans did not cover the ability to handle peak loads.A

Performance criteria should be weighed against the functional and system tests when performance is a critical success factor for system acceptance. Once performance criteria are

specified, the system conditions, timing, hardware capacity and load under which this performance is required must also be specified.

Subtask 1.3.3: Monitor and Evaluate Functional and Acceptance Tests and Prepare Reports to FNS on the Results

The **Price Waterhouse Team** will be on site for each system test and will monitor and participate in the testing. At this time, the project team will identify important discrepancies between actual and expected test outcomes. In addition, the team will provide explanations for discrepancies and describe the likely impact of each. The team will draft a brief deliverable documenting testing procedures and assessing the outcome of tests conducted.

The strategy for testing should include files to be processed and jobs to be included in the acceptance test. Test measurements, reconciliation procedures and control totals to be used for passing the test for each criterion will have to be agreed upon. The developers should consider using a specified script or series of defined test steps to run the system tests. The team should assign persons to be responsible for performing, verifying and approving the acceptance test. Time-frames and issue resolution should be specified and agreed upon before the testing begins. We will participate in the testing and provide comment and measurements based on the acceptance criteria.

The system acceptance testing phase should be based on the concept of comprehensive testing of the system before live production commences. Acceptance criteria defined early in the design stage would form the basis for acceptance testing enabling early conformation of the system's ability to meet acceptance standards and criteria. Our testing philosophy employed follows a defined "cascade." In order for successful acceptance testing, the **Price Waterhouse Team** will assume that proper testing at the following levels have been conducted when possible:

- Program design
- Program coding
- Unit testing
- Component testing
- System testing
- System integration testing

The last step in the testing process is acceptance testing. The results of the acceptance test should be retained and checked against plans to ensure that all criteria have been met. Ideally, a formal acceptance sign-off document is prepared and agreed upon. This document contains the agreed upon acceptance criteria related to functional and system integrity. It is used to confirm acceptance when the completed system is "handed over" and the system is moved from the test environment. In the event that acceptance criteria have not been met, issue resolution procedures should be invoked and the reason for non-acceptance should be documented and investigated further.

Subtask 1.3.4: Provide Technical Consultation on Policy Issues

During the course of the task, we would expect to be asked by FNS to provide input in support of policy deliberations. The types of activities include developing information to support decisions about the costs associated with the current expectation that every checkout aisle be equipped with a POS. To do this, it will be necessary to work with the food stamp compliance data base and merchant associations and other sources of secondary data to develop actual counts. Alternatively it would be possible to conduct a probability survey of participating merchants. Another possible study might address the comparative costs of EBT network transactions and EFT debit transmissions and network cost practices and policies.

On some issues, it may be desirable to bring together experts and conduct structured meetings to explore policy alternatives on such issues as EFT functions and EFT requirements, or strategies for balancing the need to provide for a cost effective distribution of EBT terminals and providing reasonable access for recipients.

In general, we will work with FNS in defining the scope of activity, determining if is possible to accomplish the research within the resource limits of the task, and if it is proceed with the collection of information, analysis, and presentation.

Subtask 1.3.5: Review Implementation Plans, Pilot Reports, Cost Analyses and Expansion Requests

The project team will review these project deliverables and provide written comments on methodologies, strategic and organizational impacts, missing information, quality and accuracy of information, documentation errors and target problems.

Review implementation plans

The successful implementation of the EBT system will require that full consideration is given to those activities which are complementary to the installation and implementation of the system. In particular, there is a need to assess the necessity for manual procedures or guidelines to help users and analysts in operating and understanding the new system. The team will review the implementation plans and at a minimum review items on the schedule such as:

- Assure realistic calendar dates for major phases/tasks of the implementation
- Standards or transaction set development/selection
- Scheduled peak work periods
- Equipment delivery and installation dates

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- Staffing levels for each schedules phase/task
- Training and materials procedures
- Data conversion schedules
- Key activity dates from the user/operations standpoints
- Business procedures and change management
- Network issues addressed and defined
- Start-up plan.

A start up plan would address the beginning of transaction processing.

<u>Review pilot reports</u>

At a minimum, we will review pilot reports for strengths and weaknesses as they relate to:

- Pilot test goals and milestones
- Established trading partner relationships and qualifications of trading partners to participate in pilot testing
- Pilot test sites
- Established pilot test procedures
- Acceptance testing procedures
- User procedure documentation
- Volume and transaction load handling

- Training
- Network services

The pilot plan/test should address the following areas:

- Definition of specific business and technical changes required for implementing EBT for specific document types
- Identification of essential project team members necessary to provide a successful EBT system implementation
- Specification of hardware, software, data communications, funding, test criteria, implementation procedures and staff required to develop and test a working model of the system.

The pilot should consist of enough detail to develop a working model which will develop into the implemented system through a series of reviews and refinements.

Review cost analyses and expansion requests

Based on our implementation and cost benefit analysis experience, we will at a minimum review and validate cost analyses and expansion requests for key elements including:

- Staffing resources by skill level
- Amount of time estimated to complete each task
- Scheduling
- Cost of staff time (including adjustments for projected increases)
- Cost of computer time;

- Hardware, software, network, and consulting support costs

We will evaluate working capital savings including: cash flow improvements and payables/receivables improvements. We will evaluate expense item savings such as:

- Telephone costs
- Cost of floats

We will assess labor item savings including:

- Document processing/preparation
- Error correction
- Reconciliation
- Mail preparation
- Telephone queries
- Data entry
- Overtime
- Supervision and management time

The review will focus on the reasonableness of the assumptions and the overall estimates.

Subtask 1.3.6: Identify Major System Deviations and Problems and Recommend Changes as Needed

If there are significant problems related to the implementation of proposed systems, the **Price Waterhouse Team** will, as requested, respond with situation assessments. In addition, the team will identify alternative scenarios and recommend solutions. Problems may be cost-related (as has occurred recently in Maryland), vendor support problems, changes in EFT switch technology affecting states developing stand-alone systems, or problems with merchants.

C. Staffing and Management Approach

This section describes our staffing and management approach to providing training and technical assistance under Task Order 1.0. The section is divided into the following subsections:

- Project team organization
- Expertise of key staff
- Proposed person loading
- Proposed schedule and deliverables

1. Project Team Organization

As described in Section II and summarized in Exhibit III-8, our overall task order management involves the coordinated effort of Price Waterhouse and its subcontractors in identifying appropriate professional resources from our respective firms to serve as task managers and provide project staff. Task Order 1.0--providing EBT training and technical assistance--requires a project team with many of skills and resources from our collective

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Organization for Managing the Task Order Contract: Matching Staff Resources with Task Order Skill Requirements

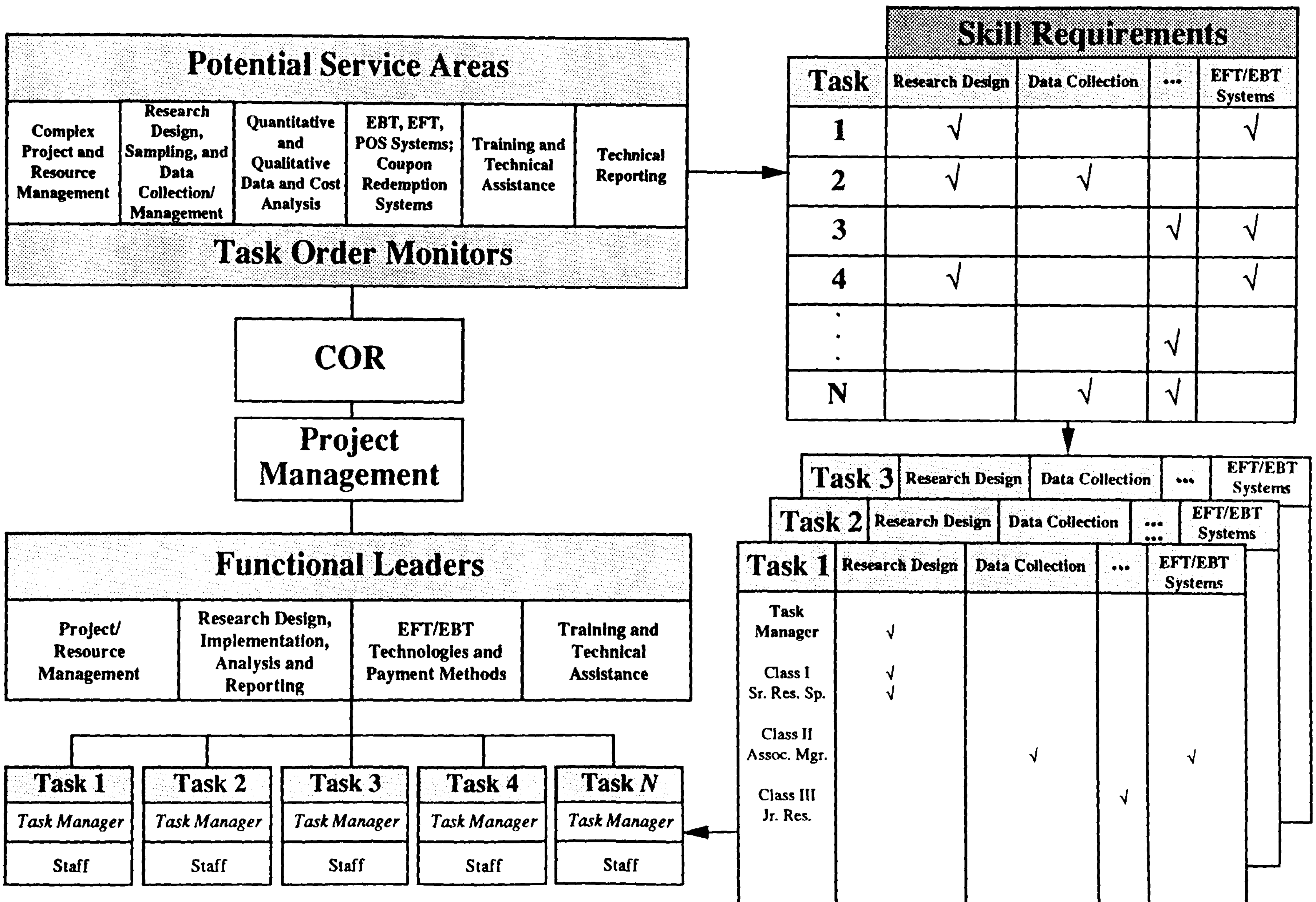

Exhibit III-8

organizations. Indeed, it is likely to be one of the more all encompassing tasks under this contract, calling for the range and diversity offered by the Price Waterhouse Team.

The first step in forming in creating a team and assigning a task order is understanding the skill requirements of the assignment. EBT training and technical assistance will require professionals with the following skills:

- **Large scale project management** to coordinate the delivery of training and technical assistance provided teams of professionals addressing subtask assignments ranging from preparing training materials, to provision of training, to direct technical assistance both on and off site in highly technical areas
- Expertise in **instructional design and the preparation of training materials** using various technologies adapted to meet the training of various EBT providers and users
- **Stand-up training** for both training of FNS Regions and state to state exchanges
- **EBT/EFT technology and related technology application and procedures** for designing, developing and implementing EBT systems
- Expertise in **computer data systems** to review and evaluate state EBT design, development, and implementation
- Experience in **developing RFPs** to be applied to EBT system procurement
- **Cost analysis and financial accounting** expertise to evaluate and compare alternative delivery systems
- **Knowledge of the food industry and access to the retailers** to facilitate strategies for retailer recruitment

Our project organization and members of our team have been selected to meet the above skill requirements as highlighted in Exhibit III-9. This team starts with our Management Team which includes our Co-Project Managers, Dr. John Korbel and Mr. Ran Advani, and Deputy Project Manager, Mr. Joseph Casey. We have also identified Mr. Casey as Task Order 1.0 Task Manager. Collectively, our Management Team, Quality Assurance Manager, Executive

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Task Order 1.0: EBT Training and Technical Assistance Project Team Organization

Subtask 1.4: Task Order Administration

Executive Committee
- Tom Colberg (PW)
- John Benton (BI)
- JoAnn Kuchak (MI)
- Leigh Seaver (MF)
- Paul Coenen (ESA)
- Arthur Burger (BCA)

Management Team
- John Korbel (PW)
- Ran Advani (PW)
- Joseph Casey (PW)

Quality Assurance Manger
- Fredric Laughlin (PW)

1.0 Task Manager
- Joseph Casey (PW)

Task Manager
1.1: Assess Training Needs and Develop a Training Plan and 1.1.1: Confirm Work Plan
- Joseph Casey (PW)

Task Managers
- 1.1.2: Perform Needs Assessment — Carol Harris (MI)
- 1.1.3: Develop Training Plan — Joseph Casey (PW)

Task Manager
1.2: Implementation of the Training Package
- Carol Harris (MI)

Task Managers
- 1.2.1: Develop Training Materials — Carol Harris (MI)
- 1.2.2: Conduct Regional Training — Judith Leibowitz (MI)
- 1.2.3: Conduct State to State Exchanges — Judith Leibowitz (MI)

Task Managers
1.3: Basic Technical Assistance
- Tom Colberg (PW)
- John Benton (BI)
- Ran Advani (PW)
- JoAnn Kuchak (MI)
- Leigh Seaver (MF)
- Arthur Burger (BCA)

Project Staff

Class I	Class II	Class III	Class IV
W. Boucher (BI), L. Buglioli (BI), E. Byrom (MI), N. Kathok (BI), J. MacAllister (BI), R. Mantovani (MI), D. Moehrke (BI), B. Tobin (BI)	F. Addo (PW), J. Appleman (PW), M. Armino (BI), K. Ball (PW), K. Brown (BI), C. Hills (PW), K. Roth (BI), B. Welch (BI)	M. Albanese (PW), M. Corley (PW), L. Hammer (MI), R. Hipsher (PW), M. Meltzer (PW), R. Pells (MI)	B. Caswell (PW), K. Confoy (PW), H. Scanlon (PW)

PW - Price Waterhouse
BI - Benton International
MI - Macro International, Inc.
MF - Market Facts, Inc.
ESA - Electronic Strategy Associates, Inc.
BCA - Burger, Carroll Associates

Exhibit III-9

Committee, and 1.0 Task Manager will be responsible for overall Task Order Administration (Subtask 1.4).

Our project organization identifies several Task Managers who will be responsible for directing various subtasks. These Task Managers include:

- Mr. Joseph Casey--Assess Training Needs and Develop a Training Plan (Subtask 1.1), Confirm Work Plan (Subtask 1.1.1), and Develop Training Plan (Subtask 1.1.3);
- Ms. Carol Harris--Perform Needs Assessment (Subtask 1.1.2), Implementation of the Training Package (Subtask 1.2), and Develop Training Materials (Subtask 1.2.1);
- Judith Leibowitz-- Conduct Regional Training (Subtask 1.2.2) and Conduct State to State Exchanges (Subtask 1.2.3)
- Ran Advani, Tom Colberg, John Benton, or Arthur Burger--Review EBT System Design Plans and Prepare Technical Critiques for FNS (Subtask 1.3.1)
- John Benton or Arthur Burger--Review Functional and Acceptance Test Plans and Prepare Technical Critiques to FNS (Subtask 1.3.2)
- Arthur Burger--Monitor and Evaluate Functional and Acceptance Tests and Prepare Reports to FNS on the results (Subtask 1.3.3)
- John Benton, JoAnn Kuchak, or Leigh Seaver--Provide Technical Consultation for Policy Issues (Subtask 1.3.4)
- All Functional Leaders Listed--Review Implementation Plans, Pilot Reports, Cost Analyses and Expansion Requests (Subtask 1.3.5)
- All Functional Leaders Listed--Identify Major System Deviations/Problems and Recommend Changes as Needed (Subtask 1.3.5).

This management organization will draw professional staff resources for all the firms on the **Price Waterhouse Team**. The skills , expertise and responsibilities of team members are described below.

2. Expertise of Key Staff

The project teams experience by topic areas is summarized in Exhibit III-10. This project team is made up of over 35 professionals from our respective firms and collectively possess the mix of skills and expertise to provide EBT training and technical assistance. Highlights of the experience for key staff are as follows:

a. Project Management

John J. Korbel (Co-Project Manager). Dr. John J. Korbel, a Partner with Price Waterhouse in the Management Science and Economics Special Practice Unit, is an economist with over 18 years of experience in the areas of public policy, research design and analysis, human services, policy evaluation and implementation assessment, economic analysis, and financial feasibility studies. Over the last 10 years with Price Waterhouse, Dr. Korbel has consulted with public and private sector clients addressing policy and analysis issues at all levels of government. Within the Management Science and Economics Unit, Dr. Korbel directs the Policy Research and Analysis group. Among his present assignments is to serve as Project Partner on our current engagement with FNS to evaluate food service management companies in the School Nutrition Program. Prior to joining Price Waterhouse, Dr. Korbel was a policy analyst with the Congressional Budget Office and was principal analyst responsible for welfare reform and a variety of income support and human services issues. Dr. Korbel holds a Ph.D. and M.A. in Economics from the University of Colorado and a B.A. from Williams College.

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Task Order 1.0: EBT Training and Technical Assistance

TEAM MEMBER Class I	Class Specialty	Project Management	Research Design Methodology	Data Collection and Management	Quantitative Data Analysis	Qualitative Data Analysis	Cost Analysis	POS, EFT, and EBT Expertise	Financial Institution Practice and Procedure	Retail Food Industry In Connection With Federal Aid and POS Technology	Training and Preparation of Systems Manuals	Technical Report Writing and Editing
John Korbel (PW)	A	√	√	√	√	√	√					√
Ran Advani (PW)	C	√	√	√	√	√	√	√	√		√	√
Joseph Casey (PW)	A	√	√	√	√	√	√		√	√	√	√
Fredric Laughlin (PW)	A	√	√	√	√	√	√				√	√
Thomas Colberg (PW)	A	√	√	√	√	√	√	√		√	√	√
John Benton (BI)	A	√	√	√	√	√	√	√	√			√
JoAnn Kuchak (MI)	A	√	√	√	√	√	√		√	√	√	
Leigh Seaver (MF)	B	√	√	√	√	√	√	√				√
Paul Coenen (ESA)	C	√	√	√				√	√	√	√	√
Arthur Burger (BCA)	A	√	√	√	√	√					√	√

PW - Price Waterhouse
MF - Market Facts
BCA-Berger Connor and Associates
BI - Benton International
ESA- Electronic Strategies Associates
MI-Macro International
A-Management
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C-Technical

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Carol Harris (MI)	C	√	√	√	√	√					√	
Judith Leibowitz (MI)	B	√									√	
Wayne Boucher (BI)	C	√	√					√	√	√	√	√
Elizabeth Byrom (MI)	B	√		√		√					√	
Louis Buglioli (BI)	C	√	√				√	√	√			
Noshir Kathok (BI)	C	√	√				√	√	√	√		√
John MacAllister (BI)	C	√	√	√	√	√	√	√	√			
Richard Mantovani (MI)	B	√	√	√	√		√				√	√
Don Moehrke (BI)	C	√						√	√	√	√	√
Bert Tobin (BI)	C	√	√	√	√	√		√	√			

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As Co-Project Manager for the contract, Dr. Korbel will coordinate administrative and management issues for the task with the 1.0 Task Manager, Mr. Casey.

Mr. Ranjit Advani (Co-project Manager). Mr. Ranjit Advani, a Partner with Price Waterhouse, has over twenty years of experience working for numerous clients on engagements involving EDP planning projects; information systems effectiveness reviews; data security and control audits; hardware, software and application feasibility studies; systems design, programming, and implementation; financial reporting and management information systems; and management of large projects. He also has supervised and participated in a number of public sector engagements. Prior to his employment with Price Waterhouse, Mr. Advani served as a systems manager for Electronic Data Systems Corporation. Like Dr. Korbel, Mr. Advani will serve as Co-Project Manager, and assume similar responsibilities. In addition to his capacity as Co-Project Manager, Mr. Advani will be available to serve as Task Manager for Subtask 1.3: Basic Technical Assistance.

Mr. Joseph Casey - (Deputy Project Manager). Mr. Joseph Casey is a Manager with Price Waterhouse and has over 17 years experience in social benefit program evaluation, probability surveys, health and human service policy evaluation with emphasis on impact and effectiveness, large-scale computer assisted data collection, and management training and evaluations. He has provided evaluation design and demonstration implementation support in a variety of settings including health, school nutrition, and food stamps as well as having conducted both large-scale and task order research in a number of program areas, including: Food Stamps, Unemployment, WIC, AFDC, Child Care, and Aging. Mr. Casey has been the principal author on a variety of reports ranging from evaluation handbooks to statistical reports. He has briefed policy makers and senior administrators as well as provided support for Congressional hearings and administrative law trials. Mr. Casey will serve multiple functions under Task Order 1.0. As Deputy Project Manager and 1.0 Task Manager, Mr. Casey will

coordinate the overall completion of the task order, and maintain communications with the rest of the management team. Mr. Casey will also serve as Task Manager for subtasks 1.1: Assess Training Needs and Develop a Training Plan; 1.1.1: Confirm Work Plan; and 1.1.3: Develop Training Plan.

Dr. Fredric Laughlin - Quality Assurance Manager. Fredric Laughlin is the Partner in Charge of Price Waterhouse's Management Science and Economics Special Practice group at Price Waterhouse. His experience cover many disciplines, including organizational and productivity reviews, program evaluation, management science, economics, operations analysis, energy programs, regulatory economics, systems design and implementation, data processing, and public administration. Dr. Laughlin has experience working for numerous Federal clients, including FNS, HUD, IRS, USPS, and the Department of Veterans' Affairs. Prior to his employment with Price Waterhouse, he worked as the director of the economic analysis division of the Cost of Living Council. Dr, Laughlin received his MBA and DBA from the George Washington University. As for the entire contract, Dr. Laughlin's responsibility under this initial task order will be as Quality Assurance Manager.

Mr. Thomas Colberg. Mr. Thomas Colberg is the Partner in Charge of Price Waterhouse's Electronic Data Interchange Consulting Group, which specializes electronic data interchange and its implementation in industry and government. He is a member of the Electron Data Interchange Association Board of Directors and has served on the U.S. Delegation to the international EDI standards development effort sponsored by the U.N. He has over eighteen years of experience in the fields of software and systems development and management of projects involving a wide variety of computer solutions, including EDI, financial systems, and other applications. Prior to his employment with Price Waterhouse, Mr. Colberg served as a Budget Analyst for the Office of Management and Budget. He received his MS and BA from the University of Illinois. As a member of the project's Executive Committee, Mr. Colberg will

share in decisions regarding the initial direction of the task orders to appropriate task managers. Further, under this task order Mr. Colberg will be available to serve as task manager for subtask 1.3: Basic Technical Assistance.

Mr. John Benton. Mr. John Benton, Chairman and CEO of Benton International, is a leading manager in the areas of business planning, strategic planning, marketing, and mergers and acquisitions in the EFT/POS field. Since the mid 1980s, he has devoted considerable effort to the development and installation of an integrated planning model for evaluating and redesigning the entire retail bank product distribution system. Prior to his tenure with Benton International, Mr. Benton was the Presidentially appointed Executive Director of the National Commission on Electronic Fund Transfers. The NCEFT created much of the policy foundation for significant banking legislation passed into law by the Federal government in recent years. He also has published one of the past decade's most requested reprints from the Harvard Business Review, "The Payoffs and Pitfalls of EFT" (July 1977). Mr. Benton will serve on the Executive Committee for the project, and like Mr. Colberg will be available to serve as task manager for subtask 1.3.

Ms. JoAnn Kuchak. Ms. JoAnn Kuchak will serve as Macro's subcontract manager. She has 19 years of experience, including 12 years as an executive in research and evaluation. Ms. Kuchak's background includes the management of large scale research and evaluation projects in FNS' food assistance programs, as well as in the area of finance and lending. Ms. Kuchak's background in research and evaluation also includes FNS' food assistance programs. With her professional training in education, Ms. Kuchak is knowledgeable in instructional technology and training strategies, and has developed curriculum, training materials, and has conducted training. During Ms. Kuchak's 19-year career, she has directed or served as the Officer in Charge of numerous other projects, including several Task Order contracts, with an aggregate value in excess of $30 million. She has demonstrated the capability to manage large,

complex projects, including those conducted in a task order environment. She has worked successfully with other firms in collaborative efforts and understands prime/subcontractor relationships. Ms. Kuchak will serve on the Executive Committee for the project and, like Mr. Colberg and Mr. Benton, will be available to serve as task manager for subtask 1.3.

Leigh Seaver. Mr. Leigh Seaver, a Market Facts Vice President in the Public Sector Research Group, has planned, performed, and managed survey projects, methodological studies, program evaluations, demonstration projects, and policy research in a variety of different substantive areas for over eighteen years. His expertise includes extensive social science research from conceptualization and design through test and scale development, field data collection, statistical data analysis, and report preparation. After receiving a PhD in Social Psychology from Northwestern University, Dr. Seaver became Assistant Professor of Social Psychology at Penn State University and also worked with the Office of Analysis and Evaluation of USDA's Food and Nutrition Service. There, as Acting Director of Program Evaluation, he managed a staff of 15 research professionals and an annual budget over eight million dollars. During his eight years at FNS, he directed research and program evaluations on the Food Stamp, WIC, and Child Nutrition Programs, as well as the evaluation of the Reading EBT program. Mr. Seaver will serve on the Executive Committee for the project and, like Mr. Colberg, Mr. Benton, and Ms. Kuchak, will be available to serve as task manager for subtask 1.3.

Mr. Paul F. Coenen. Mr. Paul Coenen, the President of Electronic Strategy Associates, has over fifteen years of experience with automated teller machines, point-of-sale, automated clearinghouses, credit cards, debit cards, electronic data interchange, electronic benefit transfer, EFT strategy, new product development, and business planning. He has authored over twenty article that have appeared in some of the most widely respected financial publications, and has been cited in numerous national newspapers and magazines. Mr. Coenen has spoken at many major EFT conferences, and was nominated for the EFT Hall of Fame. Prior to his employment

with ESA, he worked for PULSE and TYME networks, as well as the Rand Corporation. He has completed his Ph.D. degree to candidacy at the University of California. Mr. Coenen will serve on the Executive Committee of the project, and share in the guidance and staffing of this and subsequent task orders.

Mr. Arthur W. Burger. Arthur W. Burger, M.A., is a management and organization development consultant with over 10 years of FNS program experience at the Federal, state and local level. Mr. Burger is a specialist in organizational process, quality assurance, and information systems design, evaluation and implementation. Mr. Burger is the author of several management texts, and has developed six professional training seminars, specific to food and nutrition programs. Currently, Mr. Burger is engaged in the design of public health and WIC information system networks for the states of Oklahoma and West Virginia. In addition, he is directing the design of a WIC food cost forecasting model for the New York program. In addition to his work at BCA, Mr. Burger serves as an adjunct faculty member in the Information Systems Management Program at the University of San Francisco and is a registered consultant with the U.S. Office of Personnel Management, Organizational Development Services Network. Mr. Burger will serve on the Executive Committee for the project and, like Mr. Colberg, Mr. Benton, Ms. Kuchak, and Mr. Seaver, will be available to serve as task manager for subtask 1.3.

Dr. Carolyn Harris. Dr. Carolyn Harris brings substantial experience in instructional design, computer-assisted instruction development, and program evaluation. In addition to her grasp of classroom processes (based on her many years as a teacher), and her strong background in developing instruction for special needs learners, she brings to this project extensive experience with the technology used in developing instructional materials. Dr. Harris was project director of the interactive videodisc development project, "An Interactive Videodisc Program to Evaluate and Train Job-Related Math Skills for Transition." Prior to that, Dr.

Harris served as deputy project director on a research and development project, "Using Simulation Technology to Promote Social Competence of Handicapped Students." The integrated videotape, computer software, and print package resulting from this project is currently published by American Guidance Service as *Social Skills on the Job*. Dr. Harris received her doctorate in educational research and evaluation from the Virginia Polytechnic Institute and State University. Dr. Harris will serve several functions in carrying-out this task order. First, she will serve as Task Manager with significant responsibilities for subtask 1.2: Implementation of the Training Package. Prior to this, Dr. Harris will serve as task manager for subtask 1.1.2: Performing the Needs Assessment. Finally, consistent with her other responsibilities under this task order, Dr. Harris will serve as task manager for subtask 1.2.1: Development of Training Materials, prior to the implementation of the training package.

Ms. Judith Leibowitz. Ms. Judith Leibowitz is an organization development specialist with the Institute for Resource Development (IRD) Ms. Leibowitz has approximately 15 years experience as a consultant, trainer, manager, and counselor. Since 1986, Ms. Leibowitz has served as adjunct faculty to American University. She is an advisor to students completing their graduate studies in Organization Development. Ms. Leibowitz serves on the Board of the Chesapeake Bay Organization Development Network, and served on the 1984 conference planning committee for Women in OD. She has also taken certification training in the Myers Briggs Type Indicator (MBTI) from Otto Kroeger Associates, and is a member of the Association of Psychological Type (APT). In addition to the MBTI, she is proficient at using the Leader Behavior Assessment (LBA), the Developmental Task Analysis (DTA), Fundamental Interpersonal Relations Orientation (FIRO), and the Management Excellence Inventory (MEI). Prior to joining IRD, Ms. Leibowitz was a senior consultant in the Human Resources Management Consulting Practice of Arthur Young & Company, Washington D.C. Office. Within the framework of Task Order 1.0, Ms. Leibowitz will serve as task manager for subtask 1.2.3: Conducting State-to-State Exchanges.

b. Other Key Project Staff

Mr. Noshir Kathok. Mr. Noshir Kathok, an Executive Vice President with Benton International, has considerable experience in Electronic Funds Transfer systems that includes strategic, business, and financial analysis and planning; product program and management, including software project management; marketing; and engineering. He works extensively with shared ATM/POS networks in the U.S. and abroad, bank credit and charge card networks, supermarket and petroleum retailers, financial institutions active in developing and marketing EFT systems, and leading providers of EFT systems and processing services. Mr. Kathok will serve as Class I Project Staff throughout this initial task order.

Mr. Donald Moehrke. Don Moehrke has more than 25 years of experience in the data processing industry. He has held line and staff positions in the development and operation of computer systems for manufacturing, distribution, and financial industry systems, including the development of the leading EFT switch software. He has worked closely with IBM and Tandem Computers and was involved in the early development of database and productivity systems. Mr. Moehrke developed and evaluated Requests for Proposals for several networks and large grocery retailers for switching systems and services as well as in-store systems. As Vice President, International, he developed exclusive marketing relationships with IBM for the Connex products in Canada and the Asia-Pacific countries, as well as a non-exclusive marketing relationship in the U.S. He also managed other distributor relationships in the U.K. and Europe and provided consulting worldwide on the Connex products. Mr. Moehrke holds BS and MS degrees from the Sloan School of Management at the Massachusetts Institute of Technology. He has been a frequent speaker at national and international data processing organizations. He holds a Certificate in Data Processing and has been a local officer in the Association for Computing Machinery and The Institute of Management Sciences. Mr. Moehrke will serve as Class I Project Staff throughout this initial task order.

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Mr. John MacAllister. Since joining Benton International in January 1982, Mr. MacAllister has led or participated in many client projects involving issues of strategy, product and market profitability, and performance measurement criteria. He has also developed microcomputer-based simulation models for use by Benton International clients as tools for assessing risk and investment return. Mr. MacAllister's prior experience includes ten years as a Vice President--Commercial Lending with Union Bank in Los Angeles, California, and four years as President and Chief Operating Officer of Spring Corporation, a fully integrated real estate sales, development, and services company in Los Angeles. Mr. MacAllister is a frequent speaker at seminars sponsored by the U.S. Small Business Administration on the subject of bank financing and entrepreneurship. He holds a BS in Finance and an MBA from the University of Southern California. He is a candidate for a MSBA degree in Finance from the same institution. Mr. MacAllister will serve as Class I Project Staff throughout this initial task order.

Mr. Louis Buglioli. Mr. Louis Buglioli, President and Chief Operating Officer with Benton International, brings over fifteen years of experience in financial services and payment services industries to the Project Team. His expertise extends into international, wholesale, and retail banking systems, including point-of-sale, wire transfer, credit and debit cards, ATMs, and branch automation. Mr. Buglioli also brings experience in a variety of financial fields to the Project Team. As President of Telecredit, he was responsible for the firm's third-party processing of POS debit cards, credit cards, and check authorizations for a clientele of 500 financial institutions and 125,000 retail establishments nationwide. As Vice President of Citicorp, Mr. Buglioli held various positions in the Consumer Services Group. He played a major role in the introduction and enhancement of ATMs, the development of regional business centers, and the introduction of Citicard at the point-of-sale. Mr. Buglioli will serve as Class I Project Staff throughout this initial task order.

Mr. Wayne Boucher. Since joining Benton International in January 1984, Mr. Boucher has worked with numerous private and public clients on projects that require use of advanced techniques of strategic forecasting, issues management, and policy analysis--areas in which he is recognized nationally for his contributions over the last 25 years. He recently completed a study of the development of policy recommendations and a strategic plan for a major U.S. regional ATM/POS network. Mr. Boucher also led a two-year, multi-client study of the outlook to 1992 for EFT/POS in individual retail segments, covering topics such as barriers to implementation, potential consumer concerns, national and industry-specific trends, and the likely business results of full implementation of EFT/POS. Mr. Boucher's prior experience includes service as Senior Research Associate at the Center for Futures Research in the Graduate School of Business Administration at the University of Southern California (1978-1984); Deputy Director and Director of Research of the presidentially-appointed National Commission on Electronic Fund Transfers (1976-1978); co-founder and Vice President of The Futures Group (1971-1976); Research Associate at the Institute for the Future (1969-1971); Deputy Assistant to the President of The Rand Corporation (1963-1969); and Instructor at the University of Missouri (1958-1963). Mr. Boucher will serve as Class I Project Staff throughout this initial task order.

Ms. Elizabeth McClellan Byrom. Ms. Elizabeth McClellan Byrom is a Macro consultant. Ms. Byrom plans and conducts workshops; prepares and monitors budgets; leads, coordinates, and facilitates committees, advisory boards and policy making groups; evaluates programs, activities, and products; supervises staff; maintains a national network of prominent trainers; writes and produces educational materials. Ms. Byrom has coordinated and/or conducted dozens of highly acclaimed workshops for educators. Recent topics include Professional Collaboration (Cooperative Teaching and Collaborative Consultation); Integrating Technology into the Curriculum, Developing Multimedia/Hypermedia Applications for Instruction; Using Technology to Teach Math, Science, and Writing; HIV/AIDS Curriculum and

Instruction. She earned a Doctorate in Curriculum and Instruction from Virginia Polytechnic and State University. Ms. Byrom will serve as Class I Project Staff throughout this initial task order.

Dr. Richard Mantovani. Dr. Richard Mantovani, a Macro consultant, has over 17 years of experience in evaluation research, decision support, statistical analysis and systems design in the health and human services fields. His background includes project management as well as technical support experience both as a consultant to the government and private sector clients, and in decision-support roles in the private sector. Dr. Mantovani has experience in project direction, aging and aging programs, health care, survey research, evaluation research, forecasting, and database development and statistical analysis. Over the last 10 years, he has been involved in the design and implementation of large tracking and statistical analysis systems. Dr. Mantovani received his Ph.D. in Social Relations and Quantitative Methods from the Johns Hopkins University. Dr. Mantovani will serve as Class I Project Staff throughout this initial task order.

Mr. Bert Tobin. Bert Tobin has over 20 years of experience both building and managing a number of pioneering systems in the electronic transaction services, financial services, and municipal resource management industries. Mr. Tobin's recently performed a major business case analysis of a potential ATM strategy for a top brokerage company. The study included market, geographic, and cash flow analysis, as well as functional design and implementation recommendations. Mr. Tobin holds a BS in Economics from the Wharton School of Business and attended graduate school at New York University, School of Business. He has been the chairman of numerous ANSI committees and American Bankers Association sub-committees, and has represented the U.S. as a delegate to ISO, where he worked extensively on the global credit and debit card standards that exist today. Mr. Tobin will serve as Class I Project Staff throughout this initial task order.

3. Proposed Person Loading

The proposed person loading by subtask for EBT training and technical assistance is shown in Exhibit III-11. Overall, we estimate this assignment will take 15,000 professional hours over a 15 month period. These hours are responsive to the levels of assistance suggested in the RFP. The time devoted to technical assistance was determined after specific training and preparation of related training materials are completed. We have included a small number of hours for Task Order Administration (Subtask 1.4).

Hours by task area identify hours for all of the key individuals. We are committed to making these individuals available for these hours regardless of current commitments or future contracts. Should a conflict occur, we will make every effort to adjust their to meet our commitments under this contract. In the event adjustments cannot be made, we would work with FNS to identify an appropriate substitute.

4. Proposed Schedule and Deliverables

The proposed project schedule and identifications of key deliverables is summarized in Exhibit III-12. We have based our project schedule on completing all major training within the first 12 months of the contract and all technical assistance by the end of month 15. Following acceptance of our training plan, we will begin development of training materials and continue this development through month 11. Following pilot testing in month 3, Regional Training will begin in the month 6 and run through month 9. Following pilot testing in months 8 through 11, we will conduct State to State Exchanges in months 11 and 12.

Key deliverables include:

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Proposed Person-Loading (Hours)
Food Assistance Delivery Implementation
Price Waterhouse
Sample Task 1.0

Dir. Imp TA Admin

Exhibit III-11

Price Waterhouse Staff		Subtask 1.1	Subtask 1.2	Subtask 1.3	Subtask 1.4	Overall Total	Percent of Avail. Time
J. Korbel	Partner	8	60	40	8	116	4.46%
T. Colberg	Partner	0	8	8	0	16	0.62%
J. Casey	Manager	8	160	180	14	362	13.92%
R. Advani	Partner	0	54	54	8	116	4.46%
F. Addo	Manager	0	8	15	0	23	0.88%
C. Hills	Sr. Manager	0	40	40	0	80	3.08%
M. Albanese	Manager	0	60	60	0	120	4.62%
M. Corley	Manager	0	60	60	0	120	4.62%
R. Hipshur	Sr. Manager	0	60	40	0	100	3.85%
M. Meltzer	Manager	0	60	60	0	120	4.62%
B. Carwell	Sr. Consultant	8	80	80	0	168	6.46%
K. Confoy	Staff Consultant	8	80	80	0	168	6.46%
H. Scanlon	Sr. Manager	0	60	40	0	100	3.85%
Research Assistants		0	0	0	0	0	0.00%
Secretarial		0	0	0	0	0	0.00%
Total, Price Waterhouse		32	790	757	30	1,609	51.57%
Macro International							
J. Kuchak	Manager	40	96	0	0	136	5.23%
C. Harris		160	780	0	0	940	36.15%
E. Byrom		80	580	0	0	660	25.38%
L. Hammer		24	320	0	0	344	13.23%
R. Mantovani		40	160	0	0	200	7.69%
R. Pels		0	800	0	0	800	30.77%
J. Leibowitz		160	340	0	0	500	19.23%
Research Asst.	Trainer	24	880	0	0	904	34.77%
Graphic Artist		32	368	0	0	400	15.38%
Editor		16	208	0	0	224	8.62%
Secretary		40	232	0	0	272	10.46%
Total, Macro		616	4,764	0	0	5,380	
Benton International							
J. Benton		4	0	0	50	54	2.08%
Tobin		0	4	0	0	4	0.15%
Kathok		80	192	160	0	432	16.62%
MacAllister		0	4	0	0	4	0.15%
Moehrke		0	24	0	0	24	0.92%
Roth		0	80	150	0	230	8.85%
Brown		48	184	150	0	382	14.69%
Total, Benton International		132	488	460	50	1,130	
Market Facts							Avail. Time
L. Seaver		80	80	80	0	240	9.23%
J. Harris		20	20	20	0	60	2.31%
Word Processing		16	16	16	0	48	1.85%
Total, Market Facts		116	116	116	0	348	
Electronic Strategy Associates							
P. Coenen		4	40	40	60	144	5.54%
D. Semler		0	0	40	0	40	1.54%
Total, ESA, Inc.		4	40	80	60	184	
BCA, Inc.							
A. Berger		8	24	24	16	72	2.31%
Stearns		0	24	24	15	63	2.02%
S. Stollmack		0	0	15	15	30	0.96%
J. Carroll		8	10	24	10	52	1.67%
L. Yates		0	10	18	10	38	1.22%
Total BCA, Inc.		16	68	105	66	255	8.17%
Consultants		0	0	0	0	0	0.00%
Total All Staff		912	6,226	1,438	146	8,722	

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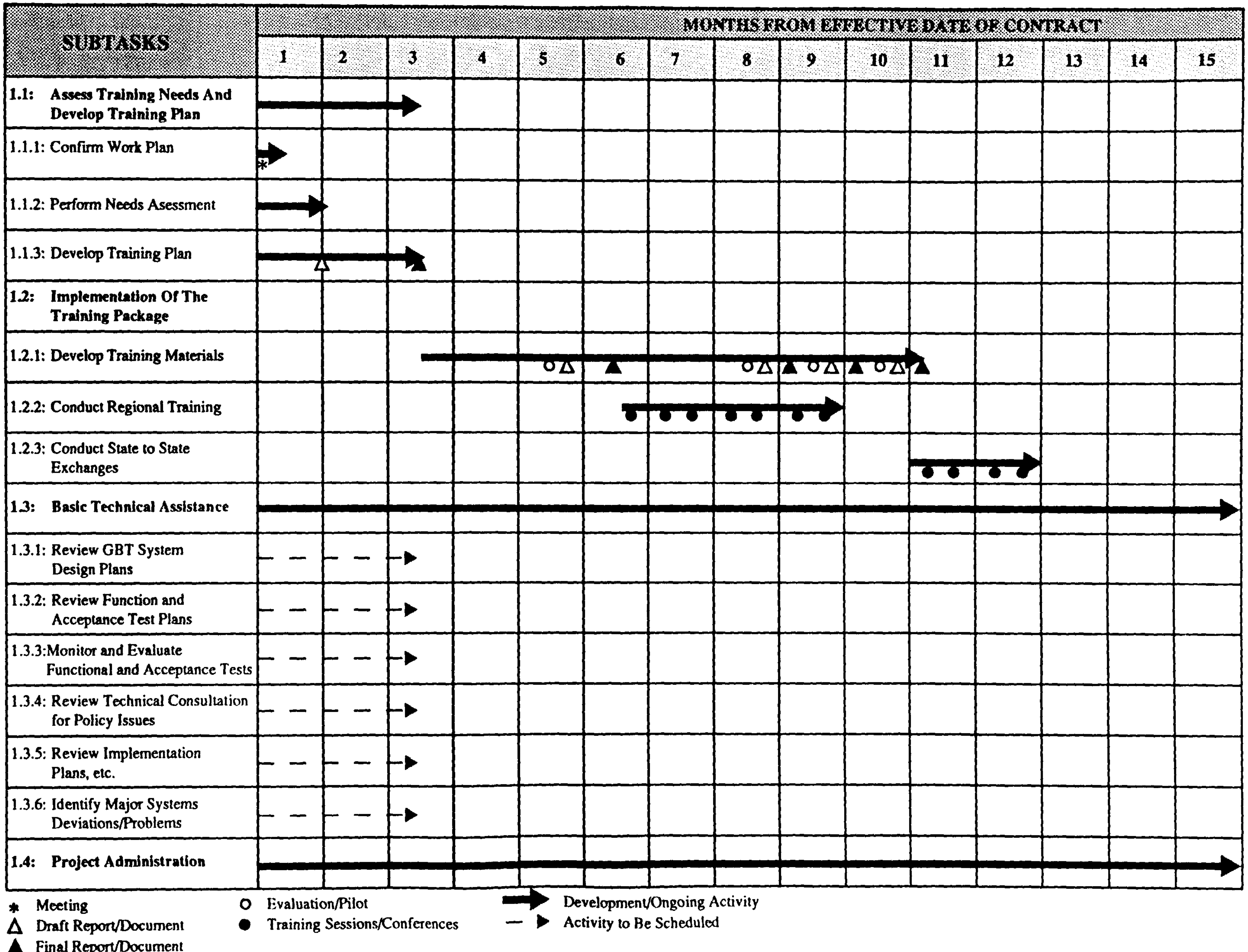
Task Order 1.0: EBT Training and Technical Assistance Project Schedule



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- Draft and final training plan
- Draft and final pilot test of regional institutes
- Draft and final pilot test of videotape
- Draft and final pilot test of videodisc
- Draft and final pilot test of multimedia applications
- Draft and final reports for technical assistance provided under Subtask 1.3.
- Monthly progress reports during the entire project.